

MANUFACTURERS RECORD

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Cover Illustration—Fuselage of JRM, the first of 20 giant flying boats under a Navy contract with Glenn L. Martin Company, noses its way from its hangar cocoon at Middle River, Maryland. The big ship, upon completion, will weigh 145,000 pounds, have a wing span of 200 feet, an overall length of 120 feet, 3 inches and a height of 44 feet, 7 inches, or about that of a four-story building. The hull weighs 10 tons.

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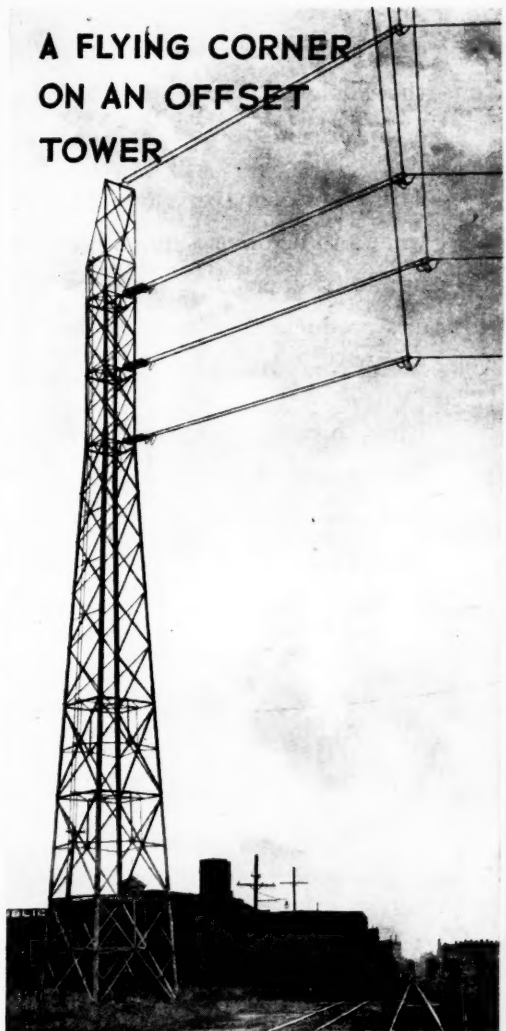
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A FLYING CORNER ON AN OFFSET TOWER



Electrical
Construction

FOR

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✓ Industrials

CONSTRUCTION DIVISION

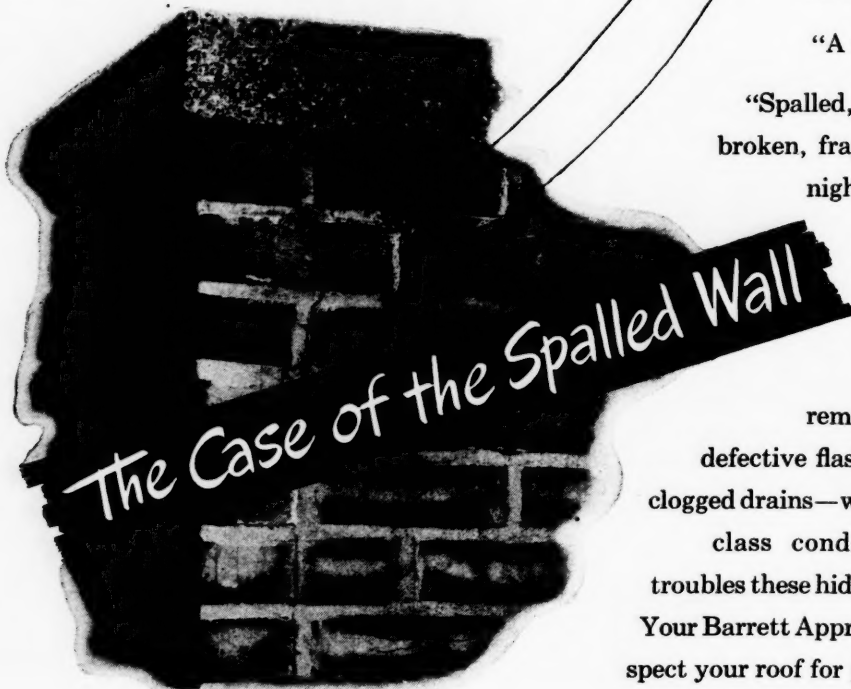
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"**W**E'VE tested every foot of the sprinkler system. Gone over the whole roof, too, and it's tight as a drum," the maintenance engineer said.

The plant manager glowered. "The main point," he said, "is what's to be done. Obviously, water is coming in. Obviously, humidity controls are useless in this room, and worst of all, production is now off to the point where we are losing time and money as fast as the clock can tick."

Right then, maintenance called the Barrett Approved Roofer, and that turned out to be the most profitable move of the day. In almost no time he was on the job, had made his inspection, given his report and suggested the remedy.



"Ever hear of a 'spalled' wall?" he asked.

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"Spalled," he repeated, "chipped, broken, fragmented... The rain last night simply worked its way through a spalled section of the parapet."

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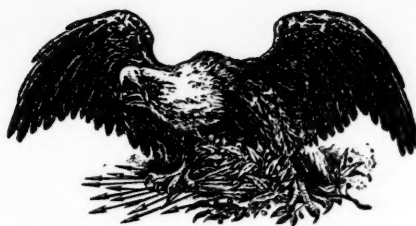
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MANUFACTURERS RECORD FOR



"What Enriches the South Enriches the Nation"

Your Business and Mine

There is no more mystery about public finance than there is about the way your business or your private affairs are conducted. This is true in spite of all the fuzzy ideas that, germinated in the skull cavities of economist astrologers and political soothsayers, pinch hit—and strike out—when they go to bat against the straight ball pitching of the Old Master, Common Sense.

All of us have seen some businesses grow from tiny beginnings to huge corporations. Without exception these businesses have become BIG business because they supplied a human need or met a human desire. But their growth, nay even their existence would not have been possible if they had attempted to operate at a loss instead of a profit. The size of their capital resources merely would have determined the duration of their lingering death.

The United States became a member of the world of nations as a tottering infant with the ratification of the Constitution. It has gradually developed until it is now the greatest nation on earth. This inspiring progress was made possible primarily because the United States satisfied an impelling need and desire in the soul of man, for the opportunity for individual freedom. But it can only stay in business and continue to provide its product "opportunity for individual freedom" if it balances its books and conserves its resources.

The problem of government finance should be considered as the same as that of an ordinary business corporation. Its difference is only one of size. The underlying principles, even the working organization, are the same.

The Federal Government has a Constitution and By-laws. It has a group of stockholders, about a hundred and forty million of them, the citizens of our Nation who are the stockholders and are also the customers desiring the "opportunity for freedom." It has a board of directors, the Congress, elected by

the legally qualified stockholders. It has executive officers, the president and vice president elected by the stockholders and the others though appointed by the president are subject to the approval of one panel of the board of directors. In fact, the government goes one step further than does the private corporation to insure that its conduct is to the interest of its stockholders, and appoints, subject to the approval of the same panel of the board of directors, the courts of justice whose duty it is to protect the stockholders from any abuse of their individual constitutional rights by their public servants or by any others among themselves.

If a private business learns that it is conducting its affairs at a loss, it knows that it must do one of two things or both of them. It must either increase its income or it must decrease its expenses. It usually tries to do both.

When it comes to the consideration of increasing prices a private business must have in mind the effect upon its customers. If it can raise them without bad effects it does so. This procedure has been followed by the federal government in the past, but today federal government is squarely up against the fact that it is defeating the purpose for which it was formed, *viz.*, "the opportunity for individual freedom."

When the point in a soak-the-customer philosophy of the unscrupulous has reached the saturation point and the customer has absorbed all of the soaking that his carcass can accommodate without rebellion then the next step in increasing income is to experiment with new products or a new sales sugar coating for diluted products, products that carry the old trade mark but are actually nothing but a wolf disguised in Grandma's nightgown and nightcap.

When such methods and super salesmanship have failed to result in a black figure at the bottom right

hand corner of a business statement and when the consuming public awakens to a realization that the product being sold is not the one it expects to buy then the business, if it intends to continue as a business, must quickly return to the principles that originally established it as successful and truthfully label its product "Genuine. Made in America."

When business, little, big or national reaches the stage in its business vicissitudes, at which it frankly recognizes that it must sell an honest product to customers who are anxious to buy it and that such products cannot be properly made and sold at a price that will show a fair business profit then the business should carefully scrutinize and analyze the cost of doing business, the beautiful paneled offices that have just happened to come into being and the beautiful young ladies and handsome and decorative gentlemen who grace them. It should look for the unnecessary costs of doing business that have parasitically fastened themselves upon it and suck from it substance without contributing value to its

output. When it finds these needless and expensive frills that add nothing to the intrinsic value of the goods with which it serves its public it should lop them off as a tree surgeon does the dead limbs and branches of a tree that jeopardize its life and impair the quality of its fruit.

Our government, yours and that of all other Americans, instead of aiming to preserve the quality of its product "opportunity for individual freedom", has tried to change that product to a list of "freedom from." By so doing, it has not only changed the product, it has destroyed its essence and weakened the confidence of its stockholders and customers.

To continue as a growing enterprise in what we think is the American way, our government, just as any little business, should return to selling the product which originally was responsible for its success. Our government, just as any other business, should prune off the dead limbs, and tear off the vines that parasitically attempt to fasten themselves and sap the strength of their host.

Truth or Consequence

The *Southern Lumber Journal* in an editorial by Richard Ben Wand has very clearly expressed thoughts that we on the editorial staff of the MANUFACTURERS RECORD feel should be placed before our readers. They are an indictment both of our government as it is being conducted and of the intelligence of those whom the government represents. We wish to present these opinions as those of an editor of ability whose interests obviously are the same as ours.

"It seems to me that our National Government is afraid of its people. A rather strong statement, yet when one studies the evidence, it is hard to draw any other conclusion. There is a complete lack of confidence as expressed by the continued concealment of facts. Are we so soft that we can't take the brutal facts of reality, and at the same time so tough and defiant that our government fears to "dish out" to us because we might rebel?

"It is common knowledge that our Congress fears the labor union leaders. Who are they to threaten our government? It is the course of the war that we are interested in, and the saving of as many American lives as is possible through shortening the length of the war. Very little else matters. We are a nation at war, and the social gains of its civilian workers are of small importance. Plenty of time for that later.

"It also appears that the President AND Congress are afraid of our Allies. If not, why haven't they stated what the United States wants out of this war? We pussyfoot around taking great care not to tread

on anybody's toes while the Russians and the British state bluntly what they expect, and it's my bet they get exactly what they are after.

"Our Allies have expressed a definite desire to know just where the United States stands—and because we have been so secretive a certain amount of friction has developed. Fortunately this seems to be mostly political. Thank God our combined Allied military heads have been able to work with closer unity.

"If the fault doesn't lie with the President and the State Department, where does it lie? Are they afraid to be frank lest the people talk too much? Congress is confused because it listens to the people, and the people don't know what it's all about. And lastly, the Allies look to the Congress for an expression of our aims. And that puts us right back where we started, which seems consistently to be the international picture.

"This war belongs to us, the citizens of the United States. It is not a war of any one executive, or group of statesmen or generals, although that seems to be the attitude in Washington. I, for one, am getting just a little weary of the way we are being patted on the head and being told that everything is under control one day, and then on the following day told that everything is in a hell of a mess.

"Those of us who have had to fight have proven that we can take it on the chin. Why not have a little confidence in those of us who remain at home? We aren't as soft as you think, Mister President!"

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THE COMPULSORY STATE

(Reprinted by permission from
The Wall Street Journal)

NO people ever entered the compulsory state through a door on which the price of admission was plainly posted. Not even the Germans, who seem to like regimentation more than they value freedom, did that.

There are other entrances well camouflaged, sometimes with one pretty theory and sometimes with another. But underneath the glitter of slogan and economic scroll work they are the same. Those who pass through them have a sense of care-free well-being, of having deposited their burdens outside. They seem to be traveling a smooth and sunlit road and they proceed under a peculiar enchantment, for while they can see where the road has taken others, they are blind as to their own destination.

The road we look at now is paved with things labeled "subsidies," "government guarantees," "floors under this," "ceilings over that," "government partnership." Traveling the road are three caravans: Agriculture, Labor and Business.

Agriculture has been on the way for a long time. Many of the caravan already see the smooth highway leading into the jagged rocks of compulsion. Some would like to turn back, but when they look the pleasant road seems to have closed in behind them.

In the Labor caravan there are fewer misgivings. Mostly its members are bedazzled with some pretty new baubles of power. Perhaps, they think, there are more of these ahead and they want to push on.

The Business caravan lectures its fellow travelers. It tells them about "free enterprise" and it warns them gravely that their yearnings for security will bring them to a bad end. But the other two look puzzled and say, "Then what are you doing here?"

Well, as a cold practical matter business has less reason to be there than either labor or agriculture. Those two constitute numerous and comparatively cohesive groups, which control votes and so have political power. At least in the compulsory state, they might be represented on the committee.

Business is not cohesive. By its very nature it is as diverse as the American landscape. Its political power is represented by no more than zero and it is probably a minus quantity.

So what is it doing there?

And the question becomes more puzzling when we recollect that business once before started down this road but was turned back by wholly fortuitous circumstances.

That original excursion was the N.R.A., conceived and proposed by business groups. Under government sponsorship business was to draw up codes, agreement to do or not to do certain things. Competition was not to be lessened, of course, but just the same there were provisions covering expansion, installation of new machinery and like subjects. What we saw was a budding experiment in cartelization.

The experiment failed because it was put in charge of a sincere and honest man. Believing in what he was doing, failing to see the results, Gen. Hugh Johnson went ahead at breakneck speed and he had not gone far before a pants presser was brought to court for working too cheap. Had Gen. Johnson been a crafty man, able to bide his time, that grisly set-up that appeared in the early New Deal days might well have taken a hold that not even the Supreme Court would have broken. And if it had, the production machine that is winning this war would have been rusty and antiquated.

Now what is the evidence that a good many business men again want to crawl under the government umbrella?

Here is a quotation from Charles P. Taft, son of an ex-president, brother of a leading senator, and himself director of the Office of Wartime Economic Affairs in the State Department:

"It seems to me high time that private business got away from its liking, perhaps unadmitted, for the security of government distribution of business under a quota system and began to justify the descriptive

term 'enterprise.' The only reason I mention that is that, within the past few months, we in the State Department who have been pushing with all our ability for the reduction of trade controls have been startled on at least two occasions to have delegations from the trade coming in to insist with us on the continuance of public purchase or other government intervention, because they were not prepared to take the kind of chances which I have always assumed were part of normal business risks."

Within the past few days we have seen the head of the Federal Deposit Insurance Corporation, the president of the American Bankers Association and the former president of that body battling against government guarantees of loans. They know that many bankers want such guarantees and are so telling their congressmen. Such men are afraid of risks. They don't want to be bankers. They want to handle government funds on a commission-basis. How long do they suppose the government will pay them for such a parasitical performance?

It was not long ago that there was a drive on Congress to get a huge appropriation for government advertising in newspapers, which fortunately was defeated. But in a country which should prize its free press, some of the custodians were looking for a government subsidy.

There has recently been an unusual amount of literature setting forth the benefits of cartels—and those booklets don't just happen. Someone pays to print and distribute them. Now one simple fact about cartels is that there must be some power to enforce the agreements that bind them. Either directly or indirectly, that hand is a government. There probably never has been a cartel of any pretensions or prestige which did not involve government power openly or secretly.

Talk to some of our so-called bureaucrats about "free enterprise" and see the smug look. If they will unloosen their tongues, they can tell a great deal about how this business group thinks perhaps one gov-

(Continued on page 74)

Southern Construction Higher as War Industry Expansion Revives

\$130,823,000
February total
third highest
recorded for
second month

by
Samuel A. Lauver

WARTIME industrial construction initiated in February pushed the total of contracts awarded in the sixteen states below the Mason and Dixon line to \$130,823,000, the third highest total recorded for the second month in southern construction history.

Compared with the same month of last

year, the current February total is up almost one hundred and five per cent, while the increase over the January, 1945, figure is more than seventy-six per cent. The two-month total for 1945 is \$205,061,000. At the same time last year the figure stood at \$127,740,000.

The February industrial construction total is \$87,597,000, a figure not equalled since the spring-summer period of 1942, when for four consecutive months southern industrial construction broke the hundred million dollar mark. The only total approaching the current February industrial total since that time was the \$80,103,000 of March, 1943.

The \$119,939,000 total of southern industrial awards for the first two months of this year is high, with no rivals as far as records reveal for the January-February combination. January made a substantial contribution to the figure with a total of \$32,342,000. First two-month total of 1944 for industrial construction was \$23,549,000.

Private construction, although harassed by the most drastic of restrictions, rose in February as compared with both the preceding month and February of last year. The current February total for private building is \$7,234,000, with residential work predominating as in the past. The total for January was \$3,603,000; for February, 1944, \$6,521,000.

Two-month private construction figures are encouraging. The current total is \$10,837,000. Of the entirety, \$8,027,000 represents expenditures for residential work. Much of the privately-financed activity was in Texas and Florida, states that had individual totals of \$2,346,000 and \$2,012,000, respectively.

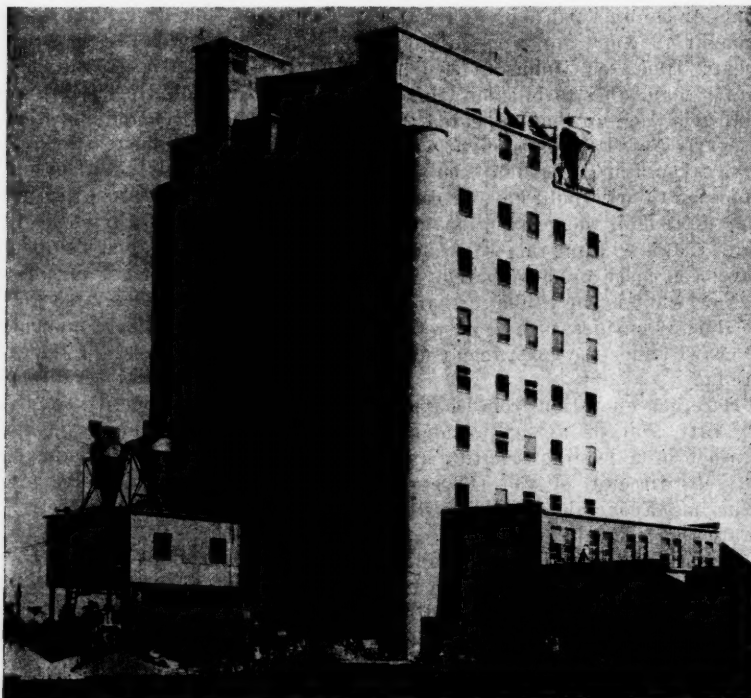
Industrial construction in the south extends through a number of industries, but the chief projects are those directly concerned with the war or with furnishing supplies for the various countries at war. Tires, chemicals, ordnance, shells and packages and food processing were all on the list.

A \$22,000,000 nylon salts plant at Orange, Texas, led the procession of expanding southern industry. With War Production Board approval already given, the DuPont project will get under way immediately to produce ingredients needed in the manufacture of urgently needed nylon for war purposes. Facilities for the 1,000 workers to be employed will be built at a cost of \$800,000.

(Continued on page 66)

SOUTH'S CONSTRUCTION BY STATES

	February, 1945 Contracts Awarded	February, 1945 Contracts to be Awarded	Contracts Awarded First Two Months 1945	Contracts Awarded First Two Months 1944
Alabama	\$46,281,000	\$26,235,000	\$70,962,000	\$10,752,000
Arkansas	225,000	4,050,000	397,000	447,000
District of Columbia	3,019,000	12,268,000	6,058,000	3,872,000
Florida	7,330,000	8,449,000	14,340,000	19,986,000
Georgia	1,648,000	17,760,000	4,882,000	5,550,000
Kentucky	3,523,000	575,000	3,659,000	815,000
Louisiana	3,249,000	8,328,000	4,532,000	6,618,000
Maryland	2,725,000	3,049,000	8,401,000	10,350,000
Mississippi	5,174,000	5,938,000	5,692,000	3,189,000
Missouri	2,511,000	1,920,000	2,846,000	3,028,000
North Carolina	1,619,000	6,633,000	4,557,000	4,955,000
Oklahoma	720,000	2,190,000	1,377,000	3,991,000
South Carolina	576,000	23,604,000	2,791,000	5,250,000
Tennessee	15,536,000	1,895,000	16,110,000	3,811,000
Texas	33,088,000	72,886,000	51,560,000	26,806,000
Virginia	3,562,000	17,493,000	6,790,000	14,047,000
West Virginia	87,000	2,060,000	67,000	2,275,000
TOTAL	\$130,823,000	\$215,363,000	\$205,061,000	\$127,740,000



World's largest peanut plant built at Graceville, Fla., by Rust Engineering Co., Birmingham, Ala., for Greenwood Products Co. Electrically operated, the plant includes nine mill floors and six silos.

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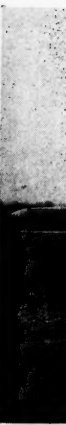
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...the L.A.W. company
...which has

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...American.



MARCO



"PUSHER" PLANE GIVES BACKWARD FLYING ILLUSION

the Curtiss-Wright Corporation, which says the new design is fast and highly maneuverable.

Officially designated as the Curtiss XP-55 and called the "Ascender," the new plane has its elevator controls in its nose and its power plant and wings to the rear of the cockpit, a design directly opposite to those now in use.

The "Ascender" is one of a number of experimental types developed for the United States Army Air Forces and although it is not to be

(Continued on page 62)



Curtiss-Wright's new "tail-first" plane with its pusher-type engine and propeller is shown in flight in the top picture. Immediately above is a nose view. The power plant and wing surfaces, as well as the Curtiss Electric 3-blade propeller are behind the pilot. Below is a view of the tail.

A UNIQUE fighter plane which appears to fly backward and embraces the pusher idea of earlier aviation days has been developed by





Bethlehem's Big Tidewater Steel Plant at Baltimore

"Steel Tomorrow"

by

Walter S. Tower

President,

American Iron and Steel Institute

WHAT lies ahead for the steel industry is certainly a vital question. It deeply concerns the half million people who as managers and employees work to produce steel. It has more than casual interest for the somewhat larger number, who as holders of steel company stocks, are the owners of the industry. And it also means much to the 135,000,000 people whose lives are affected in more or less degree by the steel that is produced.

Yet only a man who is equipped with a crystal globe in good working order and a well-fitting mantle like Elijah's has the equipment necessary to penetrate the fog and mists that cloud the future, to specify in any detail what steel will do as this country moves from war to peace.

It has never been an easy task to predict the future of steel even on a short-term basis. Today the problem is complicated because there are no authoritative answers to many

questions which intimately concern the future not only of steel but of virtually all industries.

As conditions now stand the steel industry can influence its own future only to a limited degree. Certainly, as the record shows, its members exert little influence on such a vital matter as Government tax policy, and their freedom of action in the field of wages and prices is circumscribed to say the least.

You know as much as I do, in fact, probably much more, about the prospects for those industries which have been main props under the peace-time demand for steel.

If I am not mistaken, it is part of your business to appraise the conditions which affect activities of rail-

roads, construction, mining and other major branches of industry, all of which help to create the domestic markets for steel products.

As for exports, tell me what will be the substance of certain vital aspects of our national policy, and I shall be glad to speculate with you about its likely effects on the prospects for American steel in foreign markets.

It is not the steel maker but the consumer who, in the last analysis, determines the volume and the character of steel production. Influencing the consumer's decision are such things as personal preferences, weather and the current state of his mind and pocketbook. Over none of those can the head of a steel company exert much, if any, influence.

One thing, however, which the steel industry can do to influence favorably the use of its products is to offer steels of ever higher quality and of broadened usefulness. And steel companies were doing that before the war. During the war, of course, research into the manufacture and treatment of steel has been for the purpose of improving the

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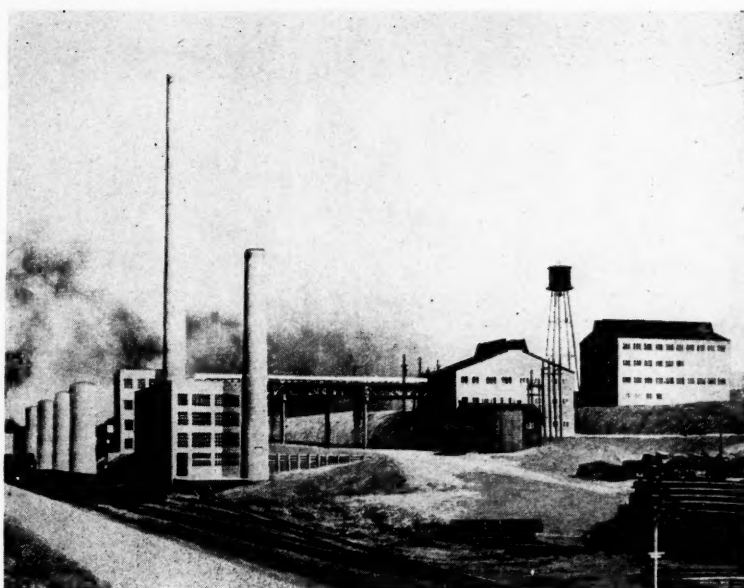
quality and performance of war materials. An important part of that research, however, seems destined to find its way into peacetime applications for steel.

Recently I asked three or four technical men to speculate on the possible, as well as probable, new uses for steel which might develop after World War II. I asked them to disregard for once the engineer's ingrained reluctance to go beyond established facts and conditions and to give their imaginations full play as to what new uses might be found in the postwar world for the products the steel industry will be prepared to produce. I am not going into all the lines of their speculations, because some of them lie too close to the nebulous realm of pure theory. But some of their answers to my question may be of help to you in evaluating future prospects for steel as a metal. I frankly admit my own surprise at some of their speculations, and I give you a sample or two for what they are—intelligent, informed guesses based in varying degree upon metallurgical facts.

Probably the most spectacular new product which these men consider possible is stainless steel hosiery. They point out that already some steel companies are producing stainless steel wire in diameter comparable to that of the threads used in silk or nylon hosiery. You already have heard of suits made from milk and ties from glass fiber. Why not, they say, hosiery from steel? If that particular speculation should ever become a reality, you may wonder whether the ladies will become as expert at repairs with the welding torch as they are with thread and needle.

Less fantastic but more significant are the developments which actually are under way in the field of steels that resist high temperatures and high pressures. For years there has been a free and strong rivalry between metallurgists and designing engineers in the race towards best utilization of metals, particularly steel. There have been times when the metallurgists led in that race — when they produced steels which could do more than designing engineers were then in a position to utilize. Recently, the en-

(Continued on page 56)

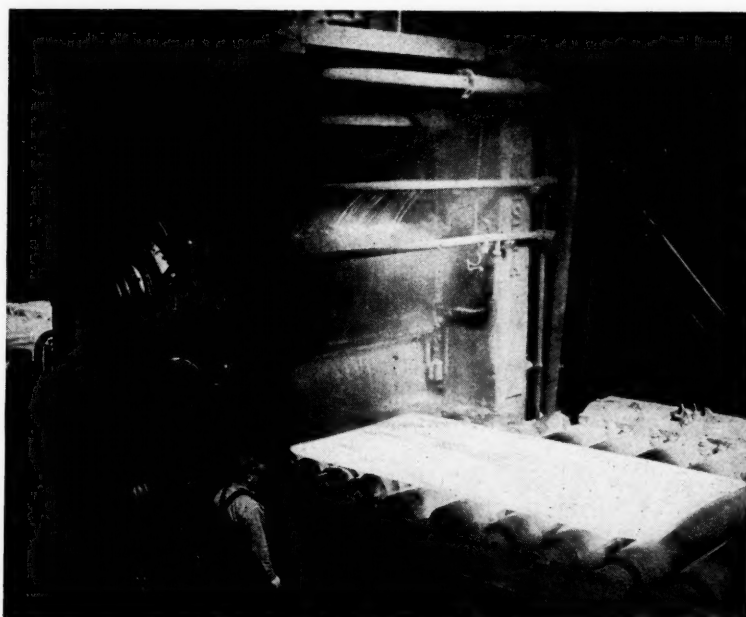


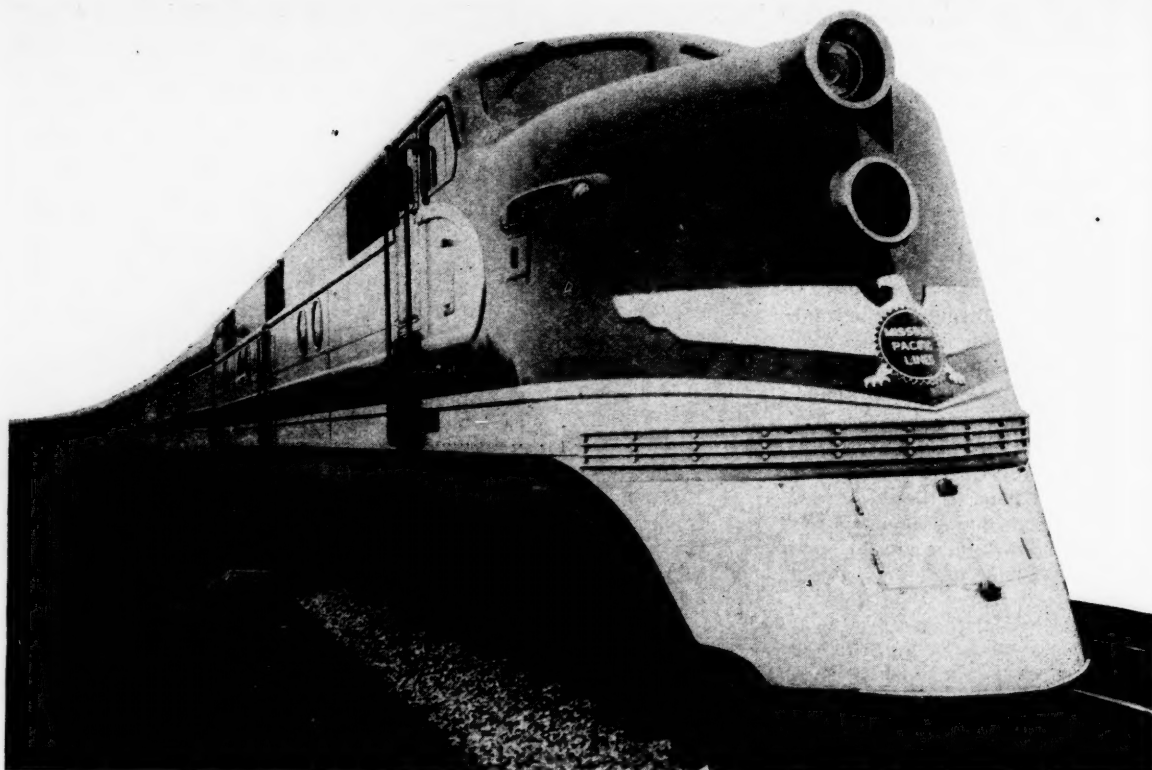
Lone Star Steel Company, Daingerfield, Texas

ANNUAL CAPACITIES IN SOUTHERN STATES FOR PRODUCING PIG IRON AND FERROALLOYS, STEEL INGOTS AND STEEL FOR CASTINGS
(Net Tons)

State	Pig Iron and Ferroalloys		Steel Ingots and Steel for Castings	
	Jan. 1, 1940	Jan. 1, 1945	Jan. 1, 1940	Jan. 1, 1945
Maryland	2,244,000	2,712,000	3,580,000	4,189,000
Virginia	36,000	36,000	2,400	7,500
West Virginia	948,000	1,434,000	2,033,000	2,186,000
Kentucky	363,000	756,000	1,240,000	1,196,000
Tennessee	34,000	54,000	...	38,000
Georgia .....	...	...	153,000	154,000
Alabama	3,230,000	4,160,000	2,891,000	4,250,000
Texas .....	...	674,000	3,300	500,000
Missouri .....	...	...	570,000	426,000
Oklahoma .....	...	...	56,000	63,000
U. S. Totals	55,723,640	67,313,890	80,950,901	95,505,280

Rolling ship plates, Fairfield Works of Tennessee Coal, Iron & Railroad Co., Alabama.





American Railroads at War

*they are doing
their war job
with fewer cars,
less engines
and a smaller
force than in
last war*

WHAT that backbone of modern transportation — the American railroads—is doing in the world's greatest emergency would amaze the average citizen and perhaps serve to pacify the turbulent shipper who complains when a freight car is slow in reaching its destination, or the passenger who growls when a train is overdue, cri-

tically compares wartime service with the schedules of less hectic peacetime days and picks quarrels with over-worked railroad personnel because of real or fancied discourtesies.

Two herculean jobs confront the railroads. The first and almost boundless task is to meet the demands of military transportation, which includes the movement of men, of supplies and munitions and food, and the materials going into their manufacture. The other problem is to continue to carry, as best they can, the great bulk of things the homefront requires in order to produce the weapons, the machines, the fuel, the clothing and the food for the armed forces of not only American fighting men, but large armies and civilian populations of other nations as well.

Both jobs are being done with little more equipment than the railroads had before the war began and with considerably less equipment and with far fewer employees than they had in the first World

War. The railroads today have approximately 600,000 fewer freight cars, 16,000 fewer passenger cars, 22,000 fewer locomotives and 500,000 fewer employees than they had in 1918. This is about one-fourth fewer freight and passenger cars, one-third fewer locomotives and nearly one-third fewer employees than they had in the last war.

Freight and passenger traffic in 1944, despite the obstacle of less equipment and labor, skyrocketed to levels far beyond previous records. The railroads performed more than 737,000,000,000 ton-miles of freight service—or 1.4 per cent more than in 1943 and 121 per cent more than in 1939, the last year that can be considered as one of peace. These figures mean that the railroads handled about 65 per cent more freight business than they did in 1929, the record freight year prior to the present war, and 82 per cent more than in 1918, the peak traffic year of the first World War.

The story is similar for railroad passenger transportation, although the rate of increase is even greater. Passenger travel in 1944 rose nine per cent above 1943 to about 96,000,000,000 passenger-miles, or more than 324 per cent more than in 1939.

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Right—"The Southerner"

Railroad passenger business in 1944 exceeded that for 1920, the high passenger travel year previous to this war, by about 105 per cent. The 1944 total is ahead of the 1918 figure by about 125 per cent.

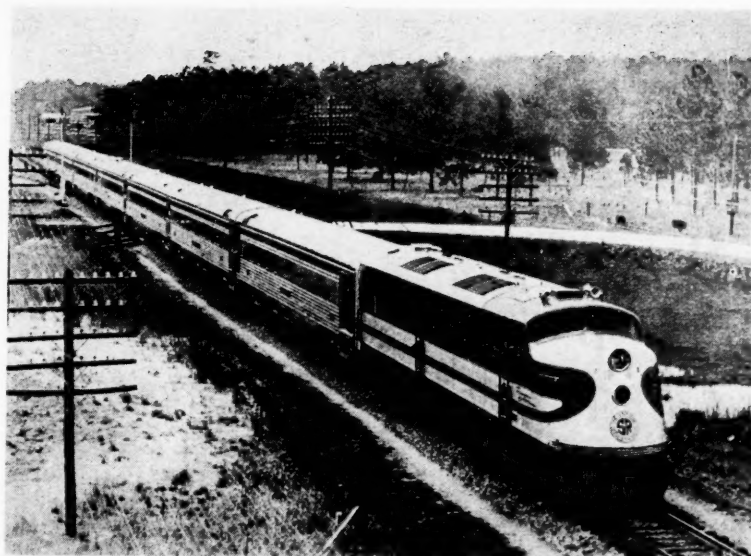
How much of the transportation service performed by the railroads since the beginning of the war has had a direct bearing on the war effort is difficult to determine. Estimates indicate that some 70 per cent of the railroads' freight traffic and about 50 per cent of their passenger traffic are directly or indirectly identified with prosecution of the war. Further estimates show the railroads handling 97 per cent of all organized troop movements; nearly 90 per cent of all army freight and express; about 90 per cent of all navy freight and approximately all naval personnel traveling under orders.

Since America entered the war in December, 1941, the railroads have carried about 28,000,000 troops in special trains and special cars. The figure is for organized movements only and does not include the millions of others traveling under orders in smaller groups. Neither does it include the personnel of the marine corps, the navy or the members of the British and Canadian armies and navies traveling in the United States. Neither does it include the thousands of prisoners of war or the millions of soldiers, sailors and members of the women's services traveling on furlough or week-end passes. Approximately 200,000 navy men travel monthly on railroad facilities.

From December, 1941, through December, 1944, the railroads hauled more than 225,000,000 tons of army freight and express. In addition to this heavy direct war load, the railroads have taken care of civilian needs since the beginning of hostilities. They have picked up the loads as they came along and many have in the past moved by other forms of transportation. Among these unaccustomed movements have been the bringing of enormous quantities of oil from the Southwest to the East and the rail movement of coal into New England.

The reason the railroads have pro-

(Continued on page 52)



REVENUE PASSENGER-MILES

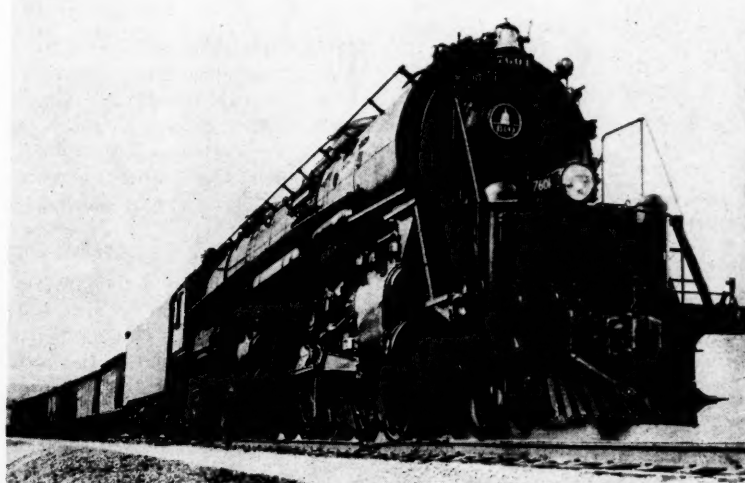
Year	Total	Increase or Decrease over 1918 (peak traffic year of First World War)		Increase or Decrease over 1920 (peak passenger traffic year prior to World War II)	
		Amount	Percentage	Amount	Percentage
1918	42,676,579,199	I 4,172,088,788	I 9.8		
1920	46,848,667,987	D 20,025,241,977	D 46.9	D 24,197,333,765	D 51.7
1939	22,651,334,222	D 18,914,220,017	D 44.3	D 23,086,308,805	D 49.3
1940	23,762,359,182	D 13,326,350,428	D 31.2	D 17,498,439,216	D 37.4
1941	29,350,228,771	I 10,982,036,287	I 25.7	I 6,809,947,499	I 14.5
1942	53,658,615,486	I 45,142,924,211	I 105.8	I 40,970,835,423	I 87.5
1943	87,819,503,410	I 53,323,420,801	I 124.9	I 49,151,332,013	I 104.9
1944	*96,000,000,000				

*Estimated

REVENUE TON-MILES

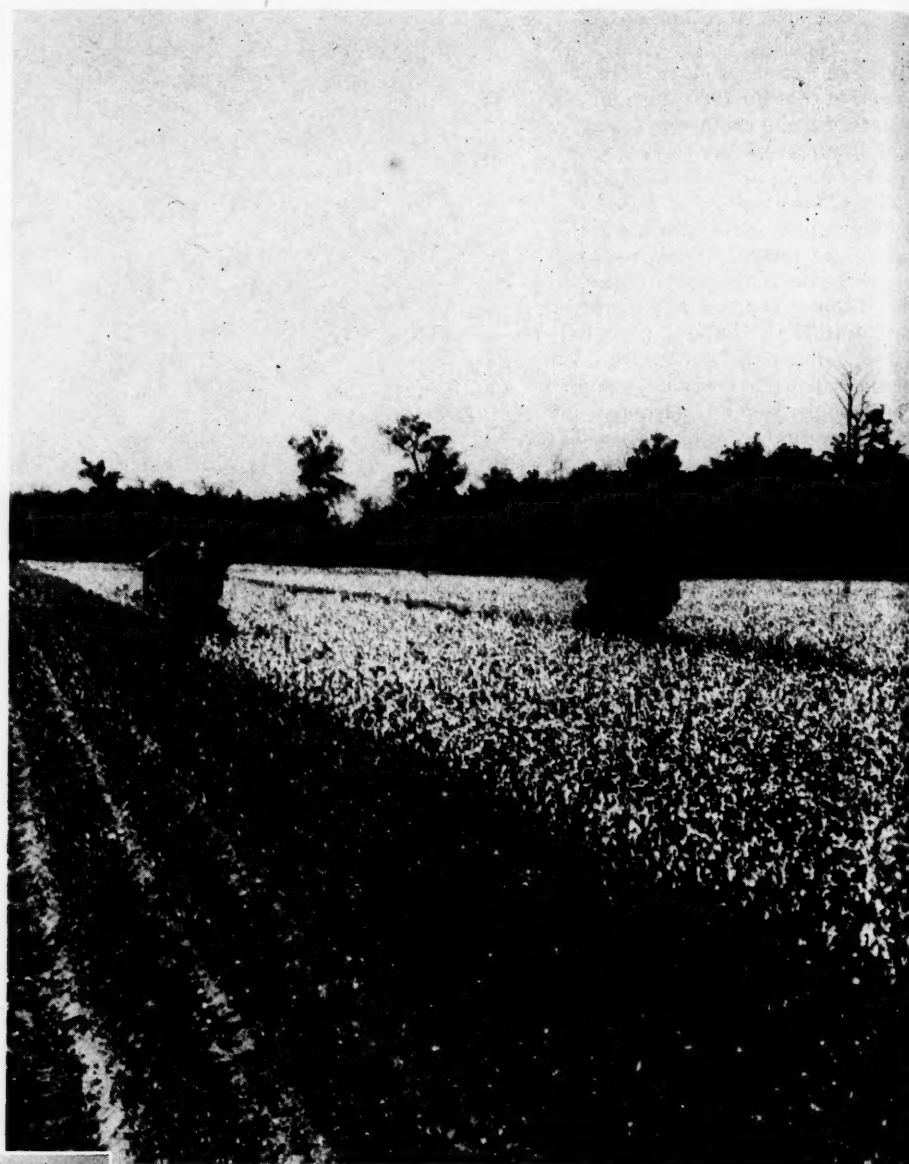
Year	Total	Increase or Decrease over 1918 (peak traffic year of First World War)		Increase or Decrease over 1929 (peak freight traffic year prior to World War II)	
		Amount	Percentage	Amount	Percentage
1918	405,379,284,206	I 41,942,276,923	I 10.3		
1929	447,321,561,129	D 71,940,872,180	D 17.7	D 113,883,149,103	D 25.5
1939	333,438,412,026	D 32,126,087,206	D 7.9	D 74,068,364,129	D 16.6
1940	373,253,197,000	I 69,692,716,794	I 17.2	I 27,750,439,871	I 6.2
1941	475,072,001,000	I 232,604,218,794	I 57.4	I 190,661,911,871	I 42.6
1942	637,983,503,000	I 321,696,309,794	I 79.4	I 279,753,933,871	I 62.5
1943	727,075,495,000	I 331,803,622,794	I 81.9	I 289,861,345,871	I 64.8
1944	*737,182,907,000				

*Estimated



Right—New B. & O. Mallet

MECHANICAL COTTON PICKERS



Left—Close-up of a McCormick-Deering picker. They are shown above in action.

THAT harvest puzzle—how to collect the fibre from the cotton plant to eliminate manual methods dating back to the beginning of agriculture—is a step nearer solution, judging from the results now being obtained with mechanical pickers being tested in the fields of the Nation's cotton growing states.

Engineers of two of the country's largest tractor concerns are working on the problem. One of the concerns — International Harvester Company — has had its McCormick-Deering machine operating in the Mississippi Delta region for several

seasons. The other — Allis-Chalmers Manufacturing Company — last fall shipped two of the long talked about Rust pickers for test.

The Berry picker, patents for which were purchased recently by John Deere & Company, has been in the invention and development stage for twenty-two years, a period during which H. N. Berry, owner and operator of a large Delta automobile firm, worked on his belief that the downy fibre could be harvested with machinery. By his method, a series of steel barbed spindles revolving on drums plucked the lint

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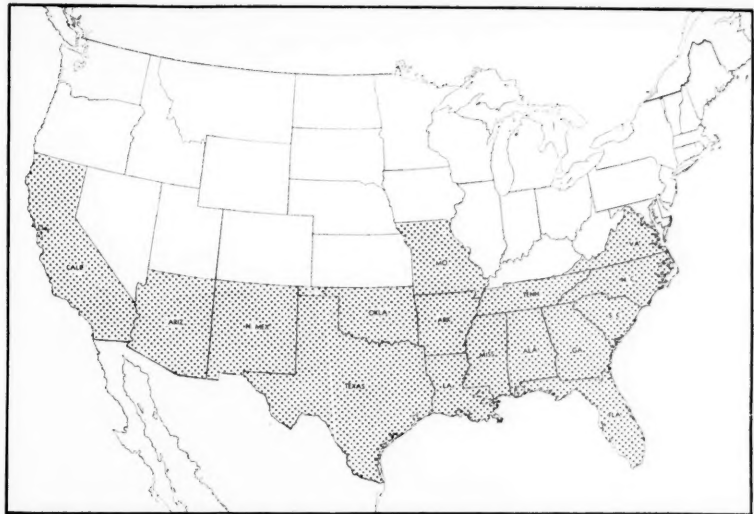
from the bolls and his first models were operated by automobile engines.

The John Deere cotton harvester is a two-row machine built for stripping all bolls from the cotton stalks in a once-over-the-field operation. Its use is confined largely to the semi-arid cotton areas of the Southwest, where they permit the cotton to ripen completely before it is stripped. The company's cotton picker is in the experimental stage and no information about it has been released.

Little publicity has been given to the Rust Brothers model, since it attracted interest of Allis-Chalmers officials. This was reputedly the first such machine announced as successful. Secret experimental work in that company's LaPorte, Indiana plant culminated in the two machines recently placed in the fields with the refinements made as the result of study by the engineering skill of one of the world's top equipment making organizations.

International Harvester plans, however, had reached the point where reports were circulating that a \$5,000,000 plant for producing the McCormick-Deering cotton harvester would be erected at Memphis, a leading cotton market of the world. War, with its resulting restrictions and the complications of material scarcities and manpower shortages have necessitated postponement of the project until civilian developments can again be considered.

The International company apparently was leading in the race for a market which up to this time, even after centuries of cotton cultivation, remains practically unexploited.



Extent of the cotton harvester market is indicated by the shaded part of the above map. Of the 16 chief cotton growing states, 13 are southern, representing most of the country's cotton growing acreage.

Cotton is still picked, except for the comparatively few machines in existence, in much the same slow, tedious method employed thousands of years ago when the Pharaohs reigned in the Valley of the Nile because man had heretofore been unable to perfect a means of plucking the cotton mechanically.

Lack of a mechanical cotton picker has been the one obstacle to complete mechanization of cotton production. There are twenty million or more acres of American soil devoted to cotton growing each year. Millions of these acres are cultivated with tractor-powered equipment, but when the bolls of the cotton plant burst into their snowy glory, the picking has been done by hand — a back-breaking, time-wasting process.

Requirements of a cotton picking

machine are exacting. It must harvest a high percentage of the mature cotton. It must not damage the plants or the immature cotton bolls. It must not injure the cotton in order to insure the highest grade of ginned fibre. It must be gathered in clean condition with the minimum of leaves, stems, hulls and other foreign matter. Profitable operation, sound mechanical design and ability to cope with varying climatic and crop conditions also enter the picture.

International studies have narrowed the subject of mechanical cotton picking down to machines using combinations of spindles and doffers. It is around this principle that International Harvester engineers have designed the McCormick-Deering cotton picker. Two general

(Continued on page 60)

A fleet of cotton pickers working a southern field.





Over 17,000 Fighting Vessels Built in Eighth Naval District

*31 companies in
Gulf States and
Mississippi river
area have part
in big program*

*others do repair
and fitting out*

WHEN Uncle Sam's Navy fans out to the four corners of the world, over seventeen thousand of its vessels, grossing more than a million and a quarter tons, can trace their wakes back to 25 shipbuilding concerns of the Eighth Naval District commanded by Rear Admiral A. C. Bennett, with headquarters at New Orleans, La.

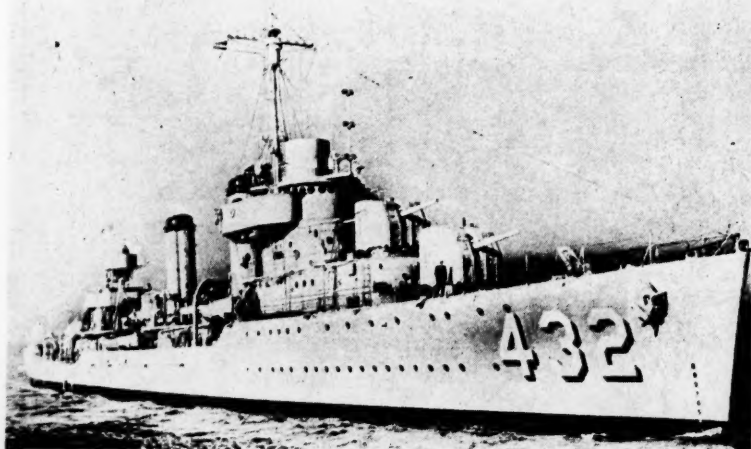
These are ships afloat. They range in size from 17,500-ton attack transport and attack cargo ships down to 100-pound rubber landing

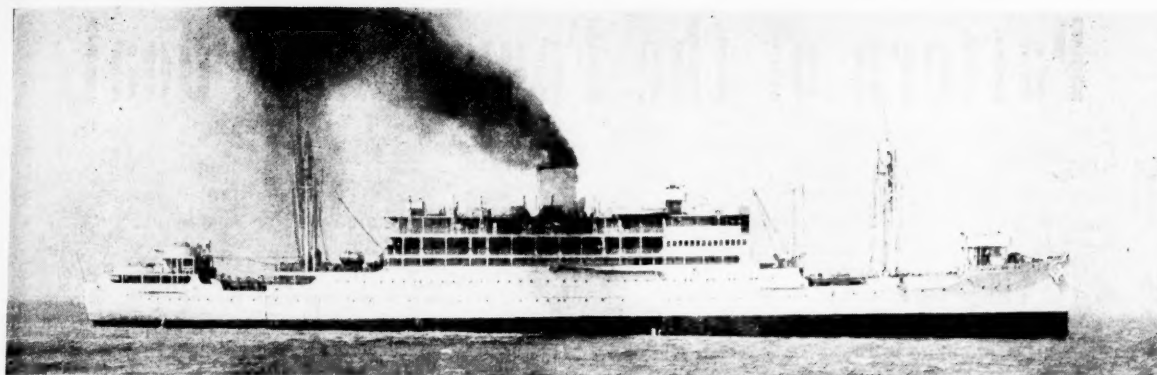
craft. There are 2,034 more, grossing another quarter million tons, now in process of being built. They are ships either built originally for the Navy or taken over from the Maritime Commission and converted by Navy specifications. They are so varied in type that it safely can be said that they are now engaged in every form of modern naval operations.

They are fighting fiercely and successfully, sweeping mines, laying nets, chasing and destroying enemy submarines, screening transports, doing an infinite amount of patrol and rescue work, transporting men and materials, and, by reason of the large number of landing craft included, have played a major role in every invasion operation. Included are APLs, or barracks ships which furnish ocean-going home for ship repair crews, enabling them to set up housekeeping alongside our floating drydocks in every theater of war.

Other ships comprising the huge Eighth Naval District armada include, 7 attack transports, 2 transports, 8 cargo ships, 12 stores issue ships, 4 ammunition ships, 3 miscellaneous auxiliary ships, 2 destroyer tenders, 2 repair ships, landing craft, 4 carrier escorts, 19 destroyers, 147 destroyer escorts, 3 net laying ships, 3 barracks ships, 2 landing ships vehicles; 106 landing ships, medium; 1 range tender, 68 minesweepers, 39 ocean-going tugs, 25 harbor tugs, 4 gasoline tankers, 20 gasoline, oil and water barges, 62 submarine chasers, 142 landing craft infantry; 213 landing craft, tanks; 1,934 landing craft, mechanized; 615 landing craft, support; 818 landing craft, personnel; 1,492 landing craft, vehicles; 6,702 landing craft, vehicle-personnel; 3 lighters, 4 seaplane derricks, 169 motor torpedo boats, 5 covered lighters, 5 open lighters, 8 district patrol vessels, 115 landing boats, 94 small boats, 1,940 landing craft, rubber (large), 2,476 landing craft, rubber (small); 1 unclassified vessel. These vessels were built between 1 Jan. 1940 and 1 Nov. 1944.

Another big contribution to the Navy is being made in New Orleans by the industrial manager's organization. There being no navy yard in the Eighth Naval District, this organization served as a navy yard





Several transports are among the products of Southern yards.

for ship repairs and conversions.

Numerous vessels, built up the Mississippi, are floated to New Orleans for fitting out. The present rate of ships being handled by the industrial manager's organization ranges from 85 to 160 per month. The term "fitting out" means briefly, the final readying for sea. All work not done at the building yard is done here.

Vessels built up the Mississippi which could not pass under bridges must have their masts stepped and topside gear replaced. Changing battle conditions require substitution of armament. Engines, generators, firing circuits, steering gear, compasses, navigating equipment and numerous other items must be checked, adjusted and/or calibrated. Dry docks must be available where damage to propeller, shaft, or hull is suffered.

Allowance material, including sextants, chronometers, cooking utensils, silverware, signal flags, typewriters, etc., must be readied for delivery to ships. Likewise essential spare parts for maintenance or in case of breakdown. After all trials, tests and repairs have been completed the ship is assigned a commissioning period during which necessary services, including supplies, fuel, water and ammunition are received.

Many romantic stories have resulted from the expediency with which ships had to be built but the most intriguing of all, perhaps, is one concerning the colorful Andrew J. Higgins, head of Higgins Industries, Inc., New Orleans. It seems that back in early 1941 he submitted to the Navy an idea for a ramp-type, welded steel tank lighter. One day

(Continued on page 53)

Eighth District Companies Building Fighting Vessels

Alabama Dry Dock and Shipbuilding Co., Mobile, Ala.—destroyer tenders, ammunition ships, cargo ships, auxiliary ships, stores issue ship, transport, district patrol vessels, repair ship, landing craft.
Boland Machine and Manufacturing Co., New Orleans, La.—motor harbor tug.
Brown Shipbuilding Co., Houston, Tex.—destroyer escorts, submarine chasers, landing craft, infantry, landing ships, medium.
Brownsville Shipbuilding Co., Brownsville, Tex.—Small boats.
Cannette Shipbuilding Co., Slidell, La.—Net laying ships, ocean-going tug.
Choctaw Boat Works, Mobile, Ala.—Small boats, surveying ship.
Consolidated Steel, Orange, Tex.—Troop transports, destroyers, destroyer escorts, landing craft, infantry, covered lighters.
Corpus Christi Shipbuilding Co., Corpus Christi, Tex.—Small boats.
Decatur Iron & Steel, Decatur, Ala.—Landing craft, tanks.
Firestone Tire & Rubber Co., Memphis, Tenn.—Rubber landing craft, large and small.
Gulf Coast Towing Co., Slidell, La.—Open lighters.
Gulf Marine Ways, Galveston, Tex.—Submarine chasers.
Gulf Shipbuilding Corp., Chickasaw, Ala.—Destroyers, minesweepers.
Gulport Boiler & Welding Works, Port Arthur, Tex.—Rescue tugs (ocean), sea-going tugs, garbage lighters, seaplane derricks, harbor tugs.
Higgins Industries, Inc., New Orleans, La.—PT boats, landing craft, vehicle; landing craft, personnel; landing craft, mechanized; landing craft, support; landing craft, vehicle-personnel, small boats and landing boats.
Ingalls Shipbuilding Co., Pascagoula, Miss.—Attack transports, transport, escort type aircraft carriers, landing ships, vehicle.
Jones & Laughlin Steel Corp., New Orleans, La.—Landing craft, tanks; landing craft, mechanized; 23 landing boats.
Levingston Shipbuilding Co., Orange, Tex.—Ocean tugs, rescue tugs (ocean), ocean tugs, auxiliary, harbor tug, district oilers, water barges, gasoline barge, unclassified vessel and landing boats.
Nashville Bridge Co., Nashville, Tenn.—Submarine chasers, barracks ships, minesweepers, range tender.
Pennsylvania Shipyards, Beaumont, Tex.—Cargo ship, store ships, minesweepers.

Pidgeon-Thomas Iron Company, Memphis, Tenn.—Landing craft, tanks.
Rice Brothers, Rockport, Tex.—Submarine chasers.
Seabrook Yacht Corp., Seabrook, Tex.—Submarine chasers.
Smith Shipyards, Pensacola, Fla.—District oilers.
Todd-Galveston Dry Dock, Inc., Galveston, Tex.—Cargo ship, 2 district patrol vessels.
Todd-Houston Shipbuilding Company, Houston, Tex.—Repair ship, landing craft, 4 gasoline tankers.
Todd-Johnson Dry Dock Company, New Orleans, La.—Cargo ships, 1 stores issue ship, 1 district patrol vessel.
Warren Fish Company, Pensacola, Fla.—Coastal mine sweepers.
Waterman Steamship Company, Mobile, Ala.—Cargo ships, 3 attack transports, 1 miscellaneous auxiliary ship.
Weaver Shipyards, Orange, Tex.—Submarine chasers, 26 motor minesweepers.
Westergard Boat Works, Biloxi, Miss.—Submarine chasers, 10 motor mine sweepers, 2 harbor tugs, big.

FIRMS DOING REPAIR, ADJUSTMENT
New Orleans: Naval Repair Base (formerly Naval Station), Algiers, La.; Todd-Johnson Dry Docks, Inc., Hinds Lane Wharf, Algiers, La.; Boland Machine & Mfg. Co., New Orleans, La.; Gulf Engineering Co., New Orleans, La.; Pendleton Shipyards Co., Inc., New Orleans, La.; Dixie Machine Welding & Metal Works, New Orleans, La.; Avondale Marine Ways, New Orleans, La.; U. S. Army Engineers Depot, New Orleans, La.; Algiers Dry Dock, New Orleans, La.
Mobile, Ala.: Alabama Dry Dock & Shipbuilding Co., Mobile, Ala.; Waterman Steamship Co., (Repair Division), Mobile, Ala.; Choctaw Boat Works, Mobile, Ala.
Galveston, Texas: Todd-Galveston Dry Docks, Inc., Galveston, Tex.; Gulf Marine Ways, Galveston, Tex.
Houston, Texas: Port Houston Iron Works, Houston, Tex.; Brown Shipbuilding Co., Houston, Tex.
Plaquemine, La.: Kansas City Bridge Co., Plaquemine, La.
Panama City, Fla.: J. A. Jones Construction Co., Panama City, Fla.
West Memphis, Ark.: U. S. Army Engineers Depot, West Memphis, Ark.
Pensacola, Fla.: Smith Shipyards, Inc., Pensacola, Fla.

Southern-built PT Boat.



Pattern of the Fourth New Deal

Reprinted through courtesy of
St. Louis Globe-Democrat

WHEN President Roosevelt made his famed pledge of 60,000,000 post-war jobs, it looked like just another pre-election rabbit pulled out of the political hat—a rabbit of doubtful legitimacy, but nonetheless impressive to most voters. It aroused little comment that he failed to analyze the need or quote authority for the figure.

In view of subsequent events, that avowed goal, however, now takes on the appearance of a vital part of the Fourth New Deal.

By his pledge the President arbitrarily set a goal which he indicated the nation's business structure must meet—apparently without consulting business or any other experienced source on either its need or its feasibility. Yet his prestige gave the figure wide acceptance at face value. For this reason if private enterprise fails to attain that level of employment, it will be private enterprise which is blamed, even though it had no part in the pledge.

So let's examine the validity of that figure and the possibility of meeting it.

The Census Bureau estimates our post-war population (1946-47) will be about 140,000,000 persons. In order to arrive at the size of the actual post-war labor force, we must subtract certain classes, including those individuals who have taken jobs only under pressure of the war emergency.

These classes are the 33,300,000 youngsters under 14 years of age, the 11,200,000 others who will be in school, the 30,400,000 housewives and former women workers who will have no desire to work after the war, the planned standing army of 2,380,000 troops, the 8,800,000 persons 65 years of age or over, the 2,500,000 undesirable characters on the economic borderline, such as racketeers, confidence men and plain bums, the 1,800,000 (between ages 14 and 65) inmates of penal institutions and hospitals for the mentally defective and the permanently disabled or chronically ill, the 800,000 who may be expected to take up residence abroad, and the 80,000 who will voluntarily retire at age 60.

With these deductions we arrive at a probable post-war labor force of 48,740,000, or nearly 5,000,000 more persons than were employed in 1940.

It follows that if 48,740,000 post-war jobs are provided, there will be one for everyone in the United States who wants to work. Hence, if the President's 60,000,000 jobs are to be filled, it will mean taking 11,260,000 youngsters out of school or women out of homes by almost as drastic a labor recruiting campaign as was necessary to achieve our war production record. The alternative is to persuade the over-age, the bums, the ill, the mentally defective to take the balance of the jobs Mr. Roosevelt says business must provide.

It is ridiculous to suggest President Roosevelt didn't and doesn't know this. Clearly then the goal was set for one purpose: To provide the New Deal with a club with which it can drive private business into the post-war doghouse, however creditable its performance.

With this device assured to induce at any time a public clamor for government pump-priming, the next step was to get the Reconstruction Finance Corporation out of the conservative hands of Jesse Jones and into more liberal ones. * * *

Paper Machine Backlog Placed at \$7,500,000

Demands on facilities of pulp and paper machinery manufacturers for production of military equipment have delayed production of new mill machinery amounting to more than \$9,500,000 worth, officials of the War Production Board Paper and Paperboard Divisions have informed the Pulp and Paper Machinery Industry Advisory Committee. Besides the deferred requests for new mill machinery, over \$12,000,000 worth of pulp and paper construction projects also had been deferred. Although in most cases the delay in filling mill machinery requests was reported to be due to lack of facilities, metals and small components, WPB said that most construction projects had been held up by lack of labor and construction materials.

Many pulp and paper machinery plants
(Continued on page 74)

As Jones himself testified, the RFC "can make loans in any amount, for any length of time, at any rate of interest, to anybody." And the probable application of that power was revealed by Wallace's statement—supplementing the President's earlier liberal views—that "an adequate program must provide America with 60,000,000 productive jobs," with the government starting the pump-priming when the level drops below 57,000,000. This plan meantime was implemented by Senator James E. Murray's resolution providing that full-scale federal spending shall begin any time national employment goes under an arbitrary figure—probably Mr. Wallace's 57,000,000.

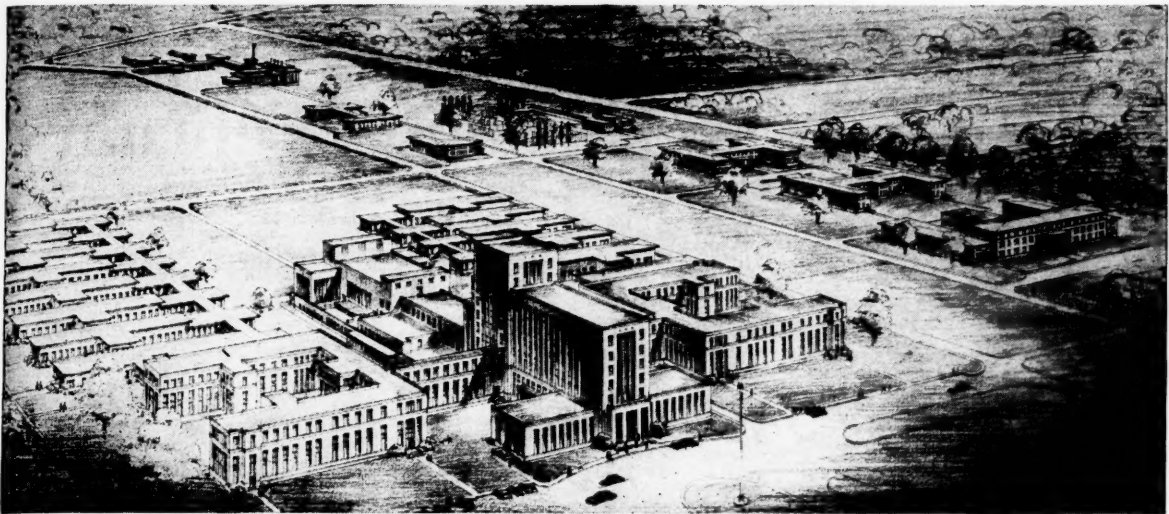
All of which adds up to a government guarantee that more persons shall have post-war jobs than want them.

However, even the cosmic planners admit this will cost money. If New Deal IV is to police our social and economic lives, the government must underwrite the expense, even though it has a public debt costing \$4,500,000,000 a year in interest alone.

To plug this loophole a new term is dragged out—the horrendous evil of "oversaving"—a word by which individual thrift for a rainy day is branded as anti-social if not downright economic sabotage. To discourage this reprehensible hang-over from Benjamin Franklin's tenets, the government must tax these savings into the Treasury, from which they will be shoveled into a sort of state socialism to provide the jobs the omniscient state thinks are needed.

Naturally it would be unthinkable for business to be so encouraged and freed from restraints that these same savings would be attracted directly into it as investment funds, with better employment results. * * *

Whether Congress will have the courage to act under pressure of inspired public fears of widespread unemployment, will determine if all of us are to have an uncontrolled joyride to complete management-by-government.



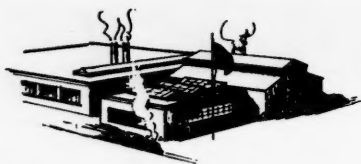
Above—A perspective panorama of the \$6,000,000 general hospital to be built by the United States Navy at Houston, Texas. The central structure is the administration and treatment building. Quarters for nurses, WAVES and civilian technicians and hospital corpsmen are to the right. The buildings at the left are temporary ward structures. The layout includes a power plant, engineering facilities, garage, laundry and greenhouse. Lt. Comdr. Louis F. Southerland is in charge of construction. W. S. Bellows Co., and R. P. Farnsworth Co., are contractors; Finn, Cummings and Taylor, the architects.

SOUTH'S CONSTRUCTION BY TYPES

	February, 1945 Contracts Awarded	Contracts to be Awarded	Contracts Awarded First Two Months 1945	Contracts Awarded First Two Months 1944
PRIVATE BUILDING				
Assembly (Churches, Theatres, Auditoriums, Fraternal)	\$746,000	\$2,661,000	\$1,045,000	\$347,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	514,000	1,375,000	1,328,000	260,000
Residential (Apartments, Hotels, Dwellings)	5,734,000	3,102,000	8,027,000	15,450,000
Office	240,000	115,000	437,000	10,000
	\$7,234,000	\$7,253,000	\$10,837,000	\$16,067,000
INDUSTRIAL	\$87,597,000	\$57,412,000	\$119,939,000	\$23,549,000
PUBLIC BUILDING				
City, County, State Federal	\$17,648,000	\$63,976,000	\$33,227,000	\$29,634,000
Housing	2,682,000	10,797,000	5,700,000	12,002,000
Schools	1,603,000	10,202,000	2,854,000	1,767,000
	\$21,933,000	\$84,975,000	\$41,781,000	\$43,403,000
ENGINEERING				
Dams, Drainage, Earthwork, Airports	\$9,050,000	\$24,690,000	\$16,936,000	\$30,461,000
Federal, County, Municipal Electric	1,380,000	2,648,000	1,380,000	186,000
Sewers and Waterworks	2,119,000	14,189,000	6,251,000	4,246,000
	\$12,549,000	\$41,527,000	\$24,567,000	\$34,893,000
ROADS, STREETS AND BRIDGES ..	\$1,510,000	\$24,196,000	\$7,937,000	\$9,828,000
TOTAL	\$130,823,000	\$215,363,000	\$205,061,000	\$127,710,000

Below—Quarters costing \$90,000 have been completed at Charleston, S. C. navy yard for ill and wounded officers of the navy, marine corps and coast guard. Called the "S.O.Q." (sick officers quarters) the building is 208 feet long and 28 feet wide, with 37 rooms and mess and recreational facilities on its two floors. The building is of temporary construction and is stuccoed to harmonize with the main hospital which it faces. A \$200,000 recreation and welfare building is under construction.





Southern Industrial Expansion—February

Petroleum Administrator of War announced construction of 100-octane aviation gasoline plants, one for the Standard Oil Co. of Indiana at Sugar Creek, Mo., and one for Shell Oil Co. at Houston, Tex.

War Production Board, Edward Falck, Director of Office of War Utilities, assigned top priorities for 2 pipelines costing \$12,000,000; scheduled for completion by Nov. 1, 1945; one project involves the addition of 4 compressor stations on Tennessee Gas & Transmission pipeline from Monroe, La. to West Virginia; the additional stations will be built near Greenville, Mass., Middleton and Springfield, Tenn. and Frenchburg, Ky.; will make possible the delivery of 60,000,000 cu. ft. additional gas daily into the Appalachian area; cost of the four stations, \$5,000,000; other project is for construction of 140 miles of 24-in. pipe line from Carthage gas field in Texas, to Tennessee Gas & Transmission Line at Monroe, La., cost \$7,000,000.

ALABAMA

BIRMINGHAM—Plant—Rheem Manufacturing Co., Birmingham, plans an expenditure of \$1,500,000 for opening of a second plant in the Birmingham area and for expansion of facilities at plant now located in North Birmingham.

OPELIKA—Addition—Batson-Cook Co., West Point, Ga., has contract for construction of mill addition to Opelika Mills.

SELMA—Building—T. A. Wooten and Doyle Holman of Wooten-Holman Lumber Co., of Snow Hill, will establish a plant to manufacture wooden boxes for shell cartons.

SHEFFIELD—Shell Plant—J. A. Jones Plant, has been authorized to spend \$7,775,000 in converting old United States Nitrate Plant No. 1, into shell plant for armed forces; of the \$7,755,000 shell plant expenditure about \$2,000,000 will be used for new construction and modernization of existing buildings; remainder to be used for equipment.

ARKANSAS

JONESBORO—Plant—Local citizens have formed a corporation for erection of a \$40,000 building to house the plant of Frolic Footwear, Inc.

NORTH LITTLE ROCK—Expansion—Standard Equipment and Supply Co., plans acquiring site on E. Third Street for erection of building.

PINE BLUFF—Plant—War Department selected site at Pine Bluff for erection of \$3,500,000 plant to manufacture fiber containers for crating and packing ammunition.

STUTTGART—Expansion—Riceland Electric Cooperative, Inc. let contract at \$47,753 to Harvill-Byrd Electric Co., Little Rock, Ark., for construction of 57.4 miles to serve 150.

FLORIDA

Plants—Florida Ramie Products, Inc., will expend \$300,000 annually in the next five years, for expansion facilities; one processing plant to be built immediately at Belle Glade, and three others to be built soon in the area of West Palm Beach.

DUNEDIN—Warehouse—Paul Smith Construction Co., Tampa, has contract for citrus juice warehouse, cost \$140,000 for Citrus Concentrates, Inc.

KEY WEST—Generator Unit—Dooderg Manufacturing Co., Milwaukee, Wis., has contract for combustion diesel engine generator unit for power station for City; cost, \$158,000.

MIAMI—Laundry Building—Witters Construction Co., Miami, has contract at \$13,000 for construction of laundry.

QUINCY—Fertilizer—Wilson Fertilizer Corp., incorporated by A. L. Wilson.

GEORGIA

BLAKELY—Plant—Rust Engineering Co., Birmingham, Ala., has contract for design and construction of peanut shelling and storage facilities for Farmers Gin & Warehouse Co.

BOWDON—Plant—Textile Rubber Co., Inc., plans truck tire production facilities for which the Defense Plant Corporation has authorized funds for \$250,000.

BRUNSWICK—Plant—A. O. Smith Co. of Milwaukee, Wis., will install munitions plant at the lighter-than-air base at Glynnco; operations will involve approximately \$10,000,000 in rehabilitation of present facilities new construction and installation of equipment.

HAWKINSVILLE—Cannery—W. F. Daniel and Thomas M. Linder, Jr., plan construction of new pimento cannery to be known as Atlanta Canning Co.

HAZELHURST—Plant—Columbus Naval Stores Co., a recently organized subsidiary of the Columbus Naval Stores Company of Savannah, acquired processing plant; plans improvements.

KENTUCKY

PADUCAH—Expansion—War Department let contract to Rust Engineering Co., Pittsburgh, Pa., and Birmingham, Ala., for chemical facilities to increase explosive production at Kentucky Ordnance Works; work in connection with expansion at Weldon Springs, Mo., in excess of \$2,000,000.

LOUISIANA

ALEXANDRIA—Plant—J. P. Rush is chairman of committee to plan for construction of frozen food locker plant at cost of \$40,000 and a cold storage unit to cost \$10,000.

LAKE CHARLES—Plant—A. Bologna & Co., plans erecting a cold storage plant cost, \$75,000.

NEW IBERIA—Plant—Iberia Frozen Food Locker Association has permission of War Production Board for construction of frozen food locker plant.

NEW ORLEANS—Dock—W. Horace Williams Co., has contract at \$525,000 for pier work for Todd-Johnson Dry Docks, Inc.

OAKDALE—Plant—Sam Hudson, Wesley Dyer, and Associates, interested in construction of a pasteurization plant in Allen Parish.

MARYLAND

BALTIMORE—Addition—Defense Plant Corporation authorized allocation of funds for construction of an addition to the Woodberry plant of the Frank G. Schenutt Rubber Co.; work to be started soon.

BALTIMORE—Addition to Plant—Guilford Folding Box Co., let contract to Armiger Construction Corp., for construction of addition to plant.

SALISBURY—Plant—Consolidated Engineering Co., Baltimore, has contract for construction of \$250,000 poultry dressing plant.

SPARROWS POINT—Building—Rheem Manufacturing Co., will spend approximately \$250,000 as a first step toward improving its Sparrows Point facilities; postwar; have 30 acres for future expansion.

MISSISSIPPI

CLARKSDALE—Expansion—The Southern Implement Manufacturing Co., leased building for manufacture of farm implements.

CLINTON—Extensions—Capital Electric Power Association, has REA loan of \$50,000 for extensions.

GREENWOOD—Extensions—Delta Electric Power Association, Greenwood, has REA loan of \$100,000 for extensions.

GRENADA—Extension of Plant—Currie & Corley, Raleigh, has contract for extension to plant of Grenada Industries; \$200,000.

NATCHEZ—Tire Factory—James T. Canizaro, Archt., Jackson, preparing plans and specifications for construction of 3 buildings for Defense Plant Corp., to be used by Armstrong Tire & Rubber Co., for production of 1,000 truck tires daily; approximate cost \$2,000,000.

PLEASANT HILL—American Scale Co., capital \$100,000, incorporated by W. S. Swift, Kansas City.

TAYLORSVILLE—Extensions—Southern Pine Electric Power Association, Taylorsville, has REA loan of \$150,000 for extensions.

MISSOURI

CLAYTON—Mining—Denton Sand and Gravel Co., incorporated by Joseph X. Strebler, St. Louis.

JOPLIN—Missouri Chemical Co., chartered by William R. Thurston, manufacturing.

KANSAS CITY—International Wilcox Electric Inc., incorporated by Robert G. Reed.

PIERCE CITY—Mining—Wentworth Mining and Milling Co., incorporated by James V. Reynolds, Kirkwood.

POTOSI—Crow Lumber & Building Material Co., capital \$15,000, incorporated by N. E. Crow.

ST. LOUIS—Plant—Universal Ordnance Works, Inc., incorporated by A. H. Rosenberg.

ST. LOUIS—Expansion—Fruehauf Trailer Co., acquired 5-acre site northeast corner of Vandeventer Avenue and Market Street; post-war improvement.

SEDALIA—Grapette Bottling Co., incorporated with \$35,000 by Harry E. Lindstrom.

TROY—Sugar Grove Telephone Cooperative, Inc., incorporated by Raymond E. Brown; telephone system.

WELDON SPRINGS—Expansion—Rust Engineering Co., Pittsburgh, Pa., and Birmingham, Ala., has contract for construction of chemical facilities to increase explosive production at Weldon Springs Ordnance Works.

NORTH CAROLINA

ALBEMARLE—Transportation—Albemarle Transit Company capital \$100,000, incorporated by G. C. McManus.

CHARLOTTE—Mills—R. S. Dickson and Associates, plan establishment of two new cotton yarn spinning plants.

CHARLOTTE—Plant—Southeastern Construction Co., has contract for an addition for A. B. Morgan Fixture Co.

DURHAM—Plant—Carolina Pulp Co., capital \$100,000 incorporated by F. C. Owen.

GASTONIA—Weaving Mill—Gastonia Junior Chamber of Commerce, interested in establishment of a weaving mill by Carolina Art Company; will erect building; work to begin at once; H. G. Drake, Gastonia, official of the Carolina Art Co., also interested in establishment of hosiery knitting mill.

HIGH POINT—Plant—S. D. Gibson, Jr., has plans by T. T. Ferree, High Point, for ice cream plant, cost \$100,000.

LENOIR—Expansion—Blue Ridge Electric Membership Corporation, plans post-war resumption of its construction program to provide electric service to an estimated 4,600 farms and other rural consumers in this area.

SILER CITY—Chemicals—Chatham Chemical Co., capital \$100,000; Charles O. Daugherty, Siler City.

OKLAHOMA

TULSA—Plant—Trailmobile Co., of Cincinnati, Ohio, acquired building for branch.

WYNNEWOOD—Refinery—Fen-Ter Refining Co., subsidiary of Kerlyn Oil Co., of Oklahoma City, acquired refinery of Cosco Oil Co.; plan improving and expanding capacity by 50 per cent of present capacity.

SOUTH CAROLINA

CHARLESTON—Abattoir—Louis Baker of Morris Baker and Sons Market, interested in establishment of abattoir in Charleston County.

FAIRFAX—Timber—Fairfax Chair Co., incorporated with J. B. O'Neal, Pres., to buy timber, manufacture furniture.

GREER—Plant—Chamber of Commerce sponsoring construction of freezer plant, cost \$25,000.

LEXINGTON—Extensions—Mid-Carolina Elec. Coop., Inc., Lexington, has REA loan of \$40,000 for extensions.

TENNESSEE

Equipment—Defense Plant Corporation authorized execution of a contract with Southeastern Motor Truck Lines, Inc., Nashville, to provide transportation equipment for operation in Tennessee and adjoining States at a cost of approximately \$85,000; Southeastern Motor Truck Lines, Inc., will operate these facilities, title remaining in Defense Plant Corp.

MEMPHIS—Plant—H. K. Ferguson Co. of Cleveland, Ohio, has contract, soon start work on a \$2,200,000 Government-owned chemical pulp plant to be operated by Chemical Pulp Division of Buckeye Cotton Oil Co.

NASHVILLE—Plant—Foster-Creighton Co., has contract for erection of \$10,000,000 factory for Goodyear Tire & Rubber Co., for manufacture of large military truck tires.

TEXAS

Gas Line—Reynosa Pipe Line Co., Corpus Christi, plans constructing approximately 30 miles of 12 and 3½ inch pipe line extending south from LaBlanca Field, Hidalgo County, through the North and South Weslaco fields in that county, and from there west to the American shore; at this point the new line would connect with about 2,000 feet of 8 and 5½ inch parallel pipelines; these 8 and 5½ inch lines would be extended across and underneath the Rio Grande River to the international border near Reynosa, Mex., to connect with a 14-inch transmission pipeline of the Gas Industrial de Monterrey; hearing now before Federal Power Commission.

AUSTIN—Extensions—Texas Power Reserve Electric Cooperative, Inc., has REA loan of \$200,000 to facilitate materials procurement.

BAY CITY—Rice Drying Plant—Gulf Coast Water Company, Bay City, plans construction of rice drying plant, will include installation of machinery and equipment and electric wiring; cost approximately \$60,000.

BORGER—Addition—H. H. Stephens, has contract for construction of addition to telephone building.

BROWNSVILLE—Plant Rebuilding—City plans rebuilding power and light plant at cost of \$500,000; may issue revenue bond.

CARTHAGE—Expansion—Chicago Corporation, owner of Tennessee Gas and Transmission Co., which Company recently completed a gas pipe line from Southwest Texas to West Virginia, started preliminary activity toward development of its recently acquired properties in the Carthage Field of Panola County; will soon start work on gas recycling plant with daily capacity of 150,000,000 feet; a 5-acre site in the northwest corner of the Morrison survey, two miles west of Carthage has been purchased.

DALLAS—Warehouse—Cowdin Brothers, has contract for construction of warehouse addition, for Screw Products Co.

FALFURIAS—Warehouse, Etc.—W. E. Crawford, has contract for construction of lumber yard, including office, lumber sheds, display room and warehouse; Alamo Lumber Co.

FREEPORT—Addition to Plant—Tellepsen Construction Co., Houston, has contract for construction of addition to Dow Chemical Plant; approximately \$50,000.

HEMPSTEAD—Plant—R. E. Baldwin, Houston, low bidder at \$40,780 for frozen food locker plant for San Bernard Co-Operative, Bellville.

HENDERSON—Electric Lines—Rusk County Electric Cooperative, have REA funds in amount of \$40,000 for construction of rural electric line extensions.

HOUSTON—Addition to Plant—Uvalde Rock Asphalt Co., plans construction of plant addition.

HOUSTON—Conversion—Port Houston Iron Works, Houston, negotiating with Defense Plant Corp., to convert present plant, 7222 S. Harbor St., into shell manufacturing plant.

HOUSTON—Conversion—U. S. Government, c/o The District Engineer, Santa Fe Bldg., Galveston, authorized conversion of former Ford Assembly Plant for use as Ordnance Plant by McEbo Co. of Houston; cost approximately \$400,000.

HOUSTON—Equipment—Defense Plant Corp., Washington, D. C., executed contract with Consolidated Chemical Industries, Inc.,

(Continued on page 64)

Constellations Assigned To Pan-American Airways

Recent arrival in Miami, Florida, of two giant Lockheed Constellations planes of the type which made cross-country air transport speed records for service on the Africa-Orient Division of Pan-American World Airways, perhaps marks the first long step toward American achievement of world-wide post-war commercial air service. Pan-American, pioneers in foreign air transport, was assigned the new planes by the Army Transport Command.

First of the huge planes arrived in Miami, February 17 from Burbank, California; the second landed in the Florida City, already the nation's greatest air express terminal, March 1. Both planes underwent extensive tests on the West Coast before assignment to their present service.

The Constellation last fall shattered all trans-continental speed records by flying from the Pacific Coast to the East Coast in six hours and 31 minutes. Details of the operations of the giant airliners will be worked out with the Army Transport Command by John A. Steele, manager of the Africa-Orient Division of Pan-American.

The big ship arriving February 17 had seven Lockheed project engineers aboard. An additional Pan-American crew returned to Burbank aboard the first Constellation, which will undergo further tests, to return the second ship to Miami.

Her four Wright Cyclone engines with horsepower totaling 8,800, equal to that of a B-29 Superfortress, the Constellation is the world's largest and most powerful land transport in operation today.

The Constellation's cruising speed exceeds 300 miles per hour and has been extended to 355. In size it compares favorably with the 72-passenger trans-Atlantic

(Continued on page 62)



Industrial News

New Electronic Heater for Brazing

Development of a new electronic induction heater for brazing, soldering, annealing, hardening and pre-heat heating applications in the rapidly expanding induction heating field was recently announced by the Allis-Chalmers Mfg. Co., Milwaukee, Wis.

With a low-loss coupling arrangement, the new Allis-Chalmers electronic generator can be adapted to a wide variety of metal-working applications without the use of radio-frequency transformers. Predetermined automatic timing controls each unit operation, assuring uniform production quality, say the manufacturers. The operator pushes the start button, and when the operation is completed, the unit automatically shuts off.

Other features include a current limiting circuit for protecting the oscillator filament and prolonging tube life; a three-phase rectifier on larger size units to obtain maximum power and prevent unbalance of the power line; safety devices for full protection of operator and unit.

Compactly built, the unit presents a modern, streamlined appearance. All models having a capacity of 10 or more kilowatts operate from either 220 or 440 volts, three phase supply.

Ingalls to Defense Committee of U. S. Chamber



R. I. Ingalls

R. I. Ingalls, Jr., of Birmingham, president of The Ingalls Iron Works Co., and vice chairman of The Ingalls Shipbuilding Corp., has been made a member of the Committee on National Defense of the United States Chamber of Commerce. The Ingalls Industries, with three steel fabrication plants at Birmingham and Pittsburgh and shipyards at Pascagoula, Miss., and Decatur, Ala., have been concentrating on war production.

Baltimorean Joins Rustless Steel

Appointment of J. Raymond Smith to the newly created position of assistant to the general sales manager of Rustless Iron and Steel Corp., was recently announced by E. P. Geary, assistant vice president and general sales manager. Mr. Smith is from Baltimore and was manager of stainless steel sheet sales for the Eastern Stainless Steel Corporation in that city. He has had twenty-two years' experience in the steel industry and in addition to sales work he also has been engaged in the purchasing, production, and cost phases of the business. His office will be in Baltimore.

Southern Agents for Thomas

Thomas Machine Manufacturing Co., Pittsburgh, Pa., recently announced the appointment of new sales and service agencies in the South. Those agencies selected are experienced for the most part in railway and structural shop fields and in engineering service for heavy machinery. The new agencies are: L. A. Benson Co., Baltimore, Md.; Smith Courtney Co., Richmond, Va.; Chandler Machinery Co., Atlanta, Ga.; Quinn and Quinn, Birmingham, Ala.; Noland Co., Chattanooga, Tenn., and, Frederick and Baker, Shreveport, and New Orleans, La.

New Rubber Cement

A new rubber cement, named Plastilock 500, a non-thermoplastic, water and aromatic oil-resistant adhesive for bonding metals, wood, plastics and ceramic material to themselves or to each other is announced by the B. F. Goodrich Co., Akron, Ohio. The company claims it provides superior bonding qualities in any of its applications, and in some cases can be used in place of rivets or screws.

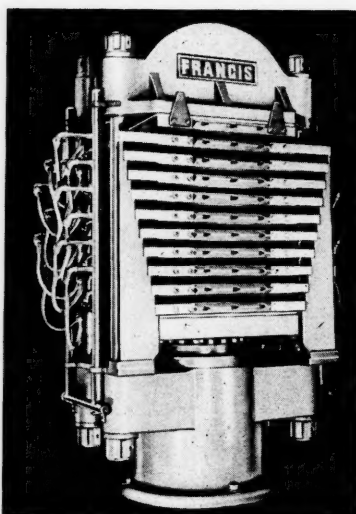
The new adhesive, used for metal-to-metal bonding, has shown a shear strength of 3,250 pounds per square inch. Tension strengths of 4,000 pounds per square inch have been reached. Tests made after the bonding of wood and plastic to aluminum, which presents extremely difficult problems of adhesion to other materials have resulted in the wood and plastic being torn because the strength of the bond was greater than that of these materials.

General Purpose Steam Plate Hydraulic Press

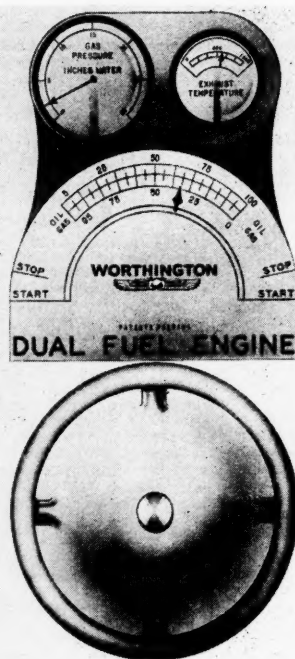
A variation to a small general purpose hydraulic press is to be found in the recent announcement by the Chas. E. Francis Co. of Huntington, Ind., of their new steam plate press. The one illustration is a 30-in. by 2-in., a 153-ton capacity hydraulic general purpose press with motor driven pump unit, automatic pressure and temperature controls, and is equipped with eleven steam plates. It is reported that this press can be furnished with 14-in. or 16-in. diameter cylinder, with or without pumping unit.

Among features the manufacturer claims valuable to the user are: extremely husky plate support, "V's" for easy loading, and the fact that strain rod nuts have a special locking device to prevent unscrewing. Although this press was designed to handle laminated plastic for war uses, it is also ideal for a wide variety of other plastic work, particularly for plastic playing cards or similar items, says the manufacturer.

Steam plate hydraulic press



Dual Fuel Diesel by Worthington



Dual fuel diesel

An engine capable of instantaneous conversion from oil to gas fuel without change in load or speed has gone into production at the Buffalo works of the Worthington Pump and Machinery Corp. Conversion from one fuel to the other or adjustment of a combination of both is accomplished by one revolution of a single control wheel. Tests and public demonstrations prove the new product highly successful; the first installation is already operating in a large municipal plant, say the manufacturers.

The need for an internal combustion engine capable of operating either on gas or oil fuel or quantities of both has long been apparent. The advantages of such an engine are recognized by all persons concerned with Diesel or gas engine operation and manufacture.

The Worthington dual fuel engine should meet these requirements ideally, as it is able to burn either gas or oil or both together. Regardless of the fuel being used, the engine operates on the highly efficient Diesel cycle, thus realizing fuel economies heretofore unobtainable in gas engine operation.

Pittsburgh Glass Shifts

The appointment of R. W. Mothershed as manager of the Atlanta branch of the Pittsburgh Plate Glass Co., and the transfer of Felix T. Hughes from that post to Pittsburgh as assistant manager of the plate glass sales department was announced recently.

Mr. Mothershed was born in Senatobia, Miss., and has been with the Company for 27 years. He served first in Memphis and later became traveling auditor and general supervisor of traveling auditors. He was named assistant comptroller of the Company last September 1.

"I am delighted at the opportunity of returning to the South," Mr. Mothershed said. "Business prospects seem excellent. I wish my prospects of finding a home here were as good."

Myers to Capitol Staff Of Cooper Bessemer



Walter F. Myers

Appointment of Walter F. Myers to the staff of the Washington office of The Cooper Bessemer Corp. has been announced by Stanley E. Johnson, general sales manager. Mr. Myers brings to the company a broad experience in the equipment and Diesel field, having served during the past 25 years as sales engineer, construction engineer and consulting engineer for public and private corporations.

Hanford Heads Research for General Aniline

Dr. W. E. Hanford, assistant director of research of General Aniline & Film Corp., has been appointed manager of the company's central research laboratory at Easton, Pa., according to George W. Burpee, president. Dr. Hanford received his Ph.D. in chemistry at the University of Illinois and prior to joining General Aniline in July, 1942, was with the duPont Company, where his record in organic research was outstanding.

Dr. W. E. Hanford



Youngstown Sales Appointments

The Youngstown Sheet and Tube Co. has announced the appointment of E. E. Ellwood as assistant district sales manager of its St. Louis district, with offices located at 611 Shell Building, St. Louis, Mo. Also the appointment of J. P. Fongley as assistant district sales manager of its New York district, with offices located at 500 Fifth Ave., New York, N. Y.

Flickinger is P. A. for Kennametal

Richard J. Flickinger has been appointed purchasing agent for Kennametal, Inc., of Latrobe, Pa. He is a graduate of Pennsylvania State College in Commerce and Finance, with 11 years' experience in general banking, and for three years has been a statistical assistant to Kennametal's chief engineer.

Cut Handling Cost 35 Per Cent

A 100 per cent increase in merchandise handled at the company's main depot is due to the installation of four Clark Fork Trucks, according to Harry F. Chaddick, president of American Transportation Company. "More than a million pounds of material every day are handled by these four machines," said Mr. Chaddick. "When we installed them we were astonished to find after a 30-day trial that we had cut our handling cost by 35 per cent."

"Today we are convinced that merchandise is handled across our platform at the lowest cost per ton in this area. These machines have been a tremendous help during the manpower crisis, because of their ability to move big tonnages with only a few men. If it were not for these fork trucks, there can be no doubt that our manpower problem would have made it impossible for us to maintain—let alone increase—the tonnage we handle daily."



Clark Fork Truck

Druckenmiller Becomes President of Penn-Dixie

The election of Barton W. Druckenmiller to succeed John A. Miller as a director and as president of the Pennsylvania Dixie Cement Corp., 60 East 42nd Street, New York, was announced recently by Victor N. Rondstrum, chairman of the corporation. Mr. Druckenmiller entered the industry in 1913 and has been with Pennsylvania-Dixie during ten of the intervening thirty-two years. He has been general sales manager and vice president and general sales manager of the corporation since January 1, 1939 and February 17, 1942, respectively.

Day-Washburne Tool Co. Renamed

The name of the Day-Washburne Tool Co. has been changed to The Day Company, and will occupy the same plant facilities at 305 W. Normal Parkway, Chicago, where the new company under the direction of Mr. Howard Q. Day will continue in the designing, engineering and manufacture of metal products. Metal specialties produced under the new company name will now be trade-marked "Day-Co."

Heppenstall Heads Board



S. B. Heppenstall

S. B. Heppenstall, since 1917 the vice president in charge of engineering has been elected chairman of the board of directors of the Heppenstall Co., it was announced recently. Mr. Heppenstall, the second son of Sam Heppenstall, company founder, joined Heppenstall as a draftsman in 1897. He has always been concerned with engineering activities, and many of the improvements made through the years in Heppenstall mechanical equipment are attributed to his ingenuity.

A.C.F. Appoints Ennis

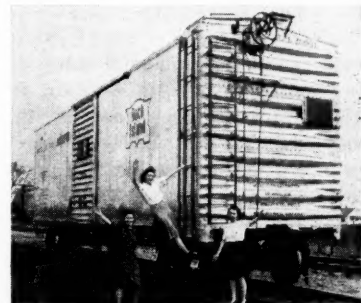
Announcement has been made by Frederick A. Stevenson, president, American Car and Foundry Co., that H. V. Ennis has been appointed assistant to vice-president, in which capacity he will assist J. A. V. Scheckenbach, vice president in charge of manufacturing.

First Aluminum Box Cars Are Built by Mt. Vernon

The first of 30 specially built aluminum box cars built by Mt. Vernon Car Manufacturing Co., a division of H. K. Porter Co., Inc., came off the assembly line recently. The cars were built in conjunction with Reynolds Metals Co., using Reynolds aluminum, for use by the Rock Island Railroad, Minneapolis and St. Louis Railway Co., and the Alton Railroad.

These cars have the same capacity as the conventional type of box car. Some of them are designed for high speed service with passenger trains. They were displayed to a large assembly of railway officials at the plant in Mt. Vernon, Ill., and were later displayed by the Reynolds Metals Co. at the LaSalle Street Station, Chicago, Ill.

Aluminum box car





Pennsylvania Type S-1 Passenger Locomotive

American Railroads at War

(Continued from page 41)

vided transportation above all previous records when faced with much less equipment and so many fewer employes is that each unit of equipment and each facility is being made to do more work than ever before. This increased utilization is due partly to improvements in plant and operating methods and partly to the teamwork of the railroads, their patrons and the government. Freight cars today are being used for the purpose for which they are intended—transportation—and not as storage warehouses as was so often the case in the last war.

Railroad officials point to the shippers' advisory boards as important factors in current success in freight car utilization. There are thirteen regional boards and a national association, with a total membership of 23,000 of the principal shippers of the country. These are voluntary organizations of industrialists, farmers, bankers and marketing and trade bodies cooperating with the railroads in promotion and maintenance of adequate transportation service and car supply.

First organized in 1923, the advisory boards help the railroads in such ways as heavier loading and prompter loading and unloading of cars and by cleaning the cars of debris before returning them to the railroads. They also tell the railroads as far in advance as possible what their car requirements will be. Since the war, they have formed about 600 freight car efficiency committees—voluntary groups of local shippers whose function is to see

that no freight car loaf.

Even doing their wartime job, the railroads are thinking about the future and are making plans for the days that will follow the restoration of peace. Railroad planning for the postwar period is being carried on by many people and in many places. It is being done by the railroads individually, by the railroads collectively, by the manufacturers of railroad equipment and supplies and by engineering schools. It is being done by scientists, engineers, draftsmen and economists. It is being done in research laboratories, in shops, in offices and along the track.

For example, the Association of American Railroads in June, 1942, organized a Railroad Committee for the Study of Transportation, with R. V. Fletcher, vice president in charge of research of the Association, as the chairman of the group. Purpose of this committee is to consider probable postwar conditions and desirable postwar policies for the railroads. The work of the committee is being done chiefly by fifteen subcommittees whose members are drawn from all departments and branches of the industry. To each subcommittee is assigned the study of some particular phase of transportation from the viewpoint of both technological processes and economic results.

Eight of the subcommittees deal with major phases of railroad operations; four with other common carriers, and three with the economic and governmental conditions under which transportation is carried on. As the work of these groups progresses, interim reports will be is-

sued. Already about twenty such reports have been prepared dealing with such varied topics as public relations, air transport, pipe line transport, federal taxation, labor relations and accounting methods. After all of the reports have been finished, their most important features will be condensed in a single volume.

Like most other industries the railroads will be faced with many problems when the war is over, but reconversion will not be one of them. Just as the railroads did not have to make any great conversion from a peacetime to a wartime status, so they will not have much conversion to do to go back. This is largely because the same railroad plant can haul either war goods or peace goods. Furthermore, improvements and changes which the railroads have made during the war have been done without government financing, thereby making unnecessary any complex financial adjustments and settlements of this nature.

However, the railroad plant is taking a terrific pounding, and equipment is wearing out faster than it can be restored. This, of course, means that there will be a considerable problem of rehabilitation and restoration right after the war.

New and improved equipment will be needed, and the improvements will tend toward better freight service for the shipping public and greater comfort and convenience for the traveling public.

Locomotives will be better adapted to varying needs. Cars will be made of lighter-weight, high-tensile metals, and there will be new types of cars. They will ride more smoothly and more quietly, and will be capable of better service all around. Track will be made of better and tougher steel, with fewer joints, less curvature and lighter grades. Improvements will also be made in methods and procedures.

Future trains will have luggage lockers and maybe checking systems whereby the passenger is relieved not only of handling but also the safe-keeping of his luggage. They may have all the conveniences of a home in that they will be equipped to function like a home or a hotel. These will be addition to and appeal of excellent safety records, even dur-

Steel Industry Expansion Placed at \$2,405,000,000

ing war, and the luxurious comfort that crack trains provide, coupled with the mental comfort of scheduled transportation in all kinds of weather.

One equipment manufacturer suggests complete light-weight freight trains set up on a fast schedule between two important terminals. He pointed out that the idea had been given a trial, but not with special equipment designed for the purpose. Merchandise shipped via such trains would be those commodities enjoying relatively high freight rates. Greater strides will be made in freight car designing in the post-war period, he believes, with a greater selection of materials and new types of construction.

Railroading is a volume business. Given sufficient volume of traffic, it can overcome most difficulties and surmount most obstacles. That has been the history of the business, it was recently stressed by a railroad association official, who emphasized that the railroads have met the rising costs, mounting wages and multiplying taxes by spreading these costs thinner and thinner over a larger volume of traffic, with the increased efficiencies which such a volume of traffic makes possible.

"A prime reason why railroads in this war are able to do twice the job of the first World War and do it so much better," he said, "is that while the railroad worker of 1918 had at his disposal, on the average, \$10,000 worth of 'tools,' his successor in 1943 was working with \$20,000 worth. As a result, not only did the work get done better, but the men received wages which averaged nearly twice as much in cents per hour, the public received truly incalculable advantage of adequate and dependable transportation, and the government, instead of having to pay out nearly two million dollars a day on account of deficits in running the railroads, received from them more than four million dollars a day in taxes."

This same official recently observed, only a little more than five years ago, however, before the beginning of the war in Europe, there was a school of thought which seemed to feel that this nation, which had been so largely builded upon its railroads, had now grown beyond its need of them. War,

MORE than \$1,310,000,000 of steel industry funds have been spent to expand and modernize American plants and properties, in addition to the \$1,095,000,000 laid out in government money for such expansion, according to the American Iron and Steel Institute.

"Within a few weeks after the fall of France and the start of the national defense program," says Steel Facts, the Institute's publication, "steel companies began to spend money to expand their facilities in anticipation of greatly increased wartime demand for special steel products.

"Their total expenditures during 1940 for expansion and new equipment were \$171,000,000, and in that year alone, nearly 2,000,000 tons of additional blast furnace capacity and 2,500,000 tons of steel capacity went into operation.

In the next year, the companies' programs were stepped up sharply, and expenditures rose to \$295,000,000. About midyear 1941 the government-financed program of steel expansion began, and \$130,000,000 in government funds were spent

during that year.

In 1942 and 1943, the industry spent \$265,000,000 and \$239,000,000, respectively, for expansion. Government expenditures in those years totaled \$286,000,000 and \$516,000,000. Last year steel companies spent \$136,000,000 and the government \$143,000,000. The government-financed part of the expansion program reached a peak in 1943.

For 1945, steel companies estimate that they will spend \$204,000,000 of their own funds. Government expenditures are expected to decline to about one-tenth the amount of the companies' expenditures, representing completion of the government-financed steel expansion program.

Actual expenditures by the steel companies in 1944 fell about 20 per cent short of the amount which they had estimated a year ago that they would spend during the year. Changes in the course of the war and inability to secure delivery of certain items of new equipment for which orders were placed are believed to be the chief reasons why actual expenditures did not come up to advance estimates.

though, is a great tester of institutions and organizations, and a great teacher—and no one really doubts now that a transportation system which can do what the American railroads have done for these five years past is, and will continue to be, essential to the safety, the well-being and the very life of this nation.

South-Built Warships

(Continued from page 45)

the Navy Department telephoned, asked him when he could show them something along this line.

"I can have you a right nice sample lighter in three days," Higgins replied.

"It can't be done," the Navy said.

"You just be here in three days," said Higgins.

Seventy-two hours later a board of Navy and Marine officers arrived to find the first completed tank lighter and a 36-foot ramp landing boat afloat on Lake Pontchartrain.

The Navy needed nine tank lighters, in the shortest possible time in connection with the American occupation of Iceland. The testing board notified Washington. Then, for the first time, the Navy gave a contract verbally by long distance telephone. Higgins was asked if he could build that number in 12 days.

"Why not?" was his answer.

The plant wasn't big enough, so Higgins simply roped off a street in the rear and set up a new production line where traffic normally flowed. Canvas curtains at each end of the block and guards armed with shot guns kept out the curious.

INFORMATION AND EDUCATION OFFICE
14th Fighter Group
APO 520, c/o Postmaster, N.Y., N.Y.

24 February 1945

The Manufacturer's Record
Baltimore, Maryland

Dear Sirs:

In an effort to do as much as possible to help our soldiers make the transition from military back to civilian life, we have set up at this station an educational and vocational guidance program which is geared to America's number one home-front problem—post-war employment and occupations. The educational program consists of an off-duty G.I. School, teaching everything from Mathematics to Practical Farming. The vocational guidance side of the picture is made up of a staff of fellow-soldiers, experienced in all fields from advertising to embalming, who act as consultants and advisors to less experienced men wanting information in their particular field. The work of these men has been supplemented by a great deal of up-to-date information obtained by writing most of the larger firms and industries. They responded almost 100% with generous supplies of booklets and publications, and as a result we have a surprisingly complete reference library—but all along the technical line of new products, techniques, ideas and developments.

The information we most urgently need now is that along the line of job-openings and opportunities. Since this group has already "celebrated" its second anniversary overseas, you can no doubt easily appreciate how out-of-touch the majority of these men are with new and recent trends and developments back in the States.

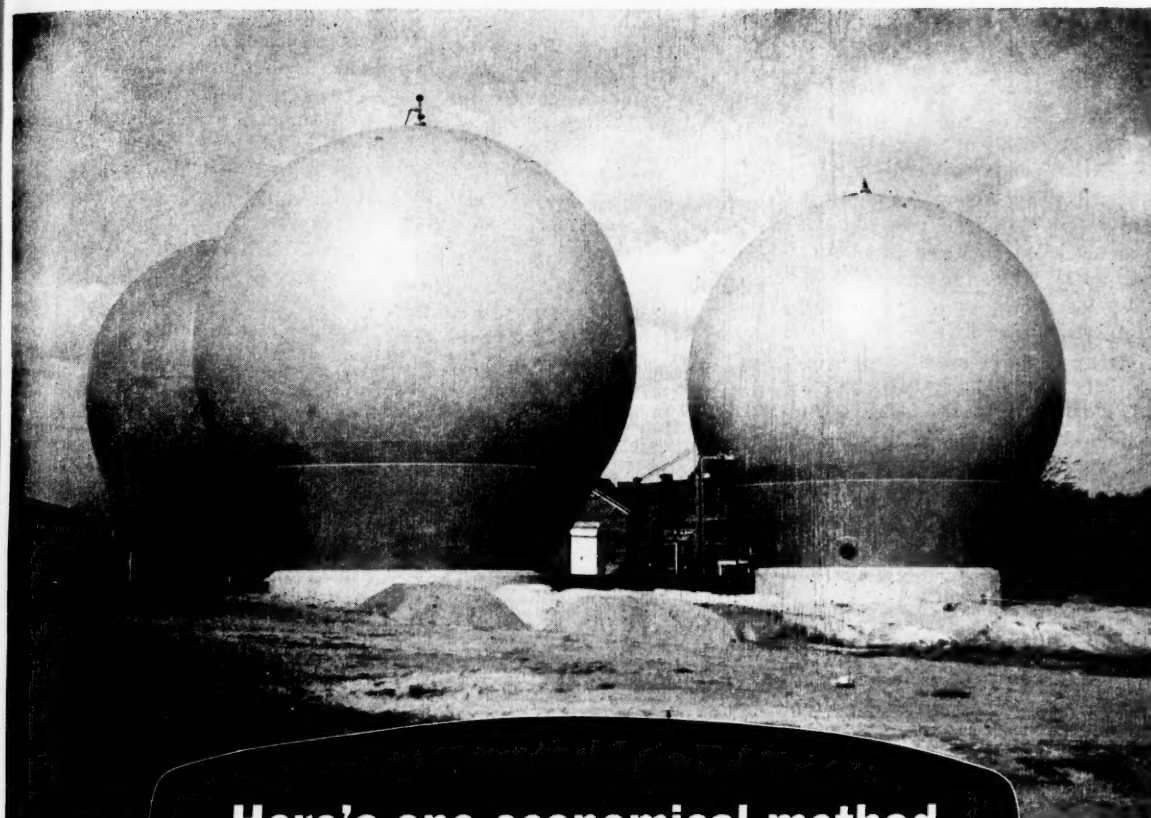
We are asking you, therefore, please to send us any material from your publications that you may feel will aid us in our program. Especially do we need any analysis or surveys that have been made regarding post-war opportunities in different fields, jobs that will be in demand, and recent trends in business. Any material that you may care to send will be greatly appreciated. The men are highly enthused over the possibilities of this program and are anxiously waiting for us to get information. We, in turn, are counting on you.

Sincerely yours,


ROBERT H. ISAACSON, Captain,
Information & Education Officer.

RHI/dem

P.S. For quickest possible transmission through the mails of anything you may care to send, please address it: The Commanding Officer, 14th Fighter Group, APO 520, c/o Postmaster, N.Y., N.Y. For Official Special Service Use."



**Here's one economical method
of storing gas**

. . . the HORTONSHERE

IN order to provide additional high pressure storage in the gas distribution system, the city of Albany, Ga., recently installed the two Hortonspheres shown in the foreground in the view above. (The Hortonsphere in the right background was erected at this location prior to the new installation).

These spherical, high pressure tanks have many desirable advantages when used for the storage of gases as well as volatile liquids. They are closed containers of rigid construction and as such, are free from operating difficulties and constant maintenance. They are pleasing in appearance, occupy

little ground area and have a minimum surface to paint.

And when you need efficient facilities for storing hydrogen, nitrogen, anhydrous ammonia, butadiene or other gases or liquids—turn to the Hortonsphere. Hortonspheres are available in standard sizes up to 65 ft. in diam. for pressures up to 100 lbs. Write our nearest office outlining your requirements.

The two Hortonspheres in the foreground of the above view are 40 ft. 10 in. in diam. and the one in the background is 40 ft. in diam. They are used to store gas at 60 lbs. per sq. in. pressure in the Albany, Ga., gas distribution system.

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"Steel Tomorrow"

(Continued from page 39)

gineers were on top in so far as developing designs — particularly for aircraft engines—which call for steels to resist higher temperatures and pressures than have ever before been needed in such applications. It was up to the metallurgists to provide such steels—and they are providing them.

Because these steels are better able to resist heat and pressure than any steels heretofore produced, they provide opportunities to cut down the weight of the parts for which they are specified. That weight-saving feature results in improved performance of important items of military equipment. Looking ahead a few years, the commercial use of steel parts at hitherto unattainable pressures and temperatures should permit further improvements of engines and constructional materials for automobiles, trains, aircraft and ships.

Much has recently been said or written concerning the competition which steel will face from plastics in the postwar world. On the other hand, little has been written on the role which plastics may play in expanding the use of steel—yet that is a development which is already underway. For four years, plastics that resist heat and corrosion have been successfully and economically used as a coating and lining for steel pipe and tubes. These steel and plastic combinations are already rendering excellent service as boiler tubes and in vital parts of machinery for the manufacture of pulp and paper, essential oils, rayon and a number of other products.

As plastics are improved and more useful types are developed, they will, of course, find wider applications. No doubt, some of them will replace steel products for certain types of service. It has been predicted, however, that plastics will help to sell more steel products than they will replace.

It is estimated that the wartime quadrupling of capacity of the plastic industry has brought this country's total plastic capacity up to about one per cent of the capacity of the steel industry. Yet if only ten per cent of the steel pipe produced

today were lined with the appropriate types of plastic for the various service conditions encountered, certain phases of the plastic industry would again have to expand capacity several-fold.

Any one attempting to appraise the steel markets of tomorrow must take into account the future role of steel as a material for residential construction. While published estimates of a million new homes a year for ten years may be beyond the bounds of actual performance, there is no question that there will be a large volume of new construction after the war. Therefore, whether the amount of steel going into each housing unit is two tons—as was about the average before the war—or whether it will increase to three or four tons is a question of considerable importance both to steel producers and to observers of the steel industry.

No matter-of-fact steel man who is familiar with the subject expects to see an all-steel house. A far more likely development will be a house using larger amounts of steel along with several other materials, each chosen because it is the best suited for a particular function. Even then one must not overlook the importance of personal taste and preference, particularly with regard to design and appearance of a house. People being the contrary creatures that they usually are, the fact that a house is properly designed from an engineering and economic point of view may bear little weight with a prospective buyer as against his preference for more conventional designs and constructions.

Today we accept as commonplace the use of structural members formed of light-gage sheet steel in the construction of our automobiles and in the construction of ships, airplane fuselages, furniture and office equipment. On the other hand, until very recently the use of such cold-formed, light steel members and panels in building construction was inconsistently regarded as somewhat of an experiment. Today fully one-third of the personnel of the United States Navy, and a sizable part of the Army, is housed in buildings constructed with light-gage structural steel members.

Light steel sheets or strip may be easily formed in a variety of shapes and panels to meet a wide range of service demands and an equally wide range of architectural applications. They can be as useful in building a Cape Cod cottage as in the so-called modernistic "house of tomorrow." These light-gage steel sections exhibit surprising strength and they serve the double purpose of providing the structural strength to support the load of the floor and wall and at the same time provide the surface of those floors and walls.

During the war there have been developed new adhesives and new methods of attaching collateral finishing materials to metal shapes and panels. New protective coatings and treatments have been devised to broaden their use for both structural and ornamental purposes. Furthermore, the light steel structural panels and constructions are ideal for use in radiant heating installations. They provide ready-made duct-like spaces that can be utilized for wall, ceiling or floor panel heating systems.

The relatively light weight of these shapes and panels makes for easy fabrication, low transportation costs and quick and simple erection on the site. All those are factors that contribute to economy and utility and will be particularly important if labor costs prove to be higher in the future than they were in the past—as seems possible.

In other fields, too, some interesting new uses for steel are in the offing. Any one of them might some day prove to be an important outlet for products of the steel industry. It was only a few years ago that solar heating systems and wind power generators were to be found mainly in the pages of such publications as "Popular Science" and "Popular Mechanics." Such devices have now passed from fantasy to fact although, because of wartime restrictions, only a few installations have been made up to this time. Further developments along those lines may readily grow into an outlet for a considerable tonnage of steel just as was the case with air-conditioning equipment in the ten years or so before the war temporarily checked that activity.

It is considered very possible
(Continued on page 58)



Sometimes There's Quite a Crowd

Maybe you don't realize it, because so many Long Distance calls go through so promptly.

But sometimes, in some places, there's an extra heavy rush and all available circuits are in use and people are waiting.

Then the operator will make this wartime suggestion—"Please limit your call to 5 minutes."

BELL TELEPHONE SYSTEM



"Steel Tomorrow"

(Continued from page 56)

that some time in the postwar period colored steel will be developed and marketed. Research on the problem of coloring steel throughout its cross section rather than just on its surface is already underway in several quarters. And it has been reported that at least one producer has succeeded in making a stainless steel which is black throughout its cross section. If colorful, corrosion-resistant steel could be developed for manufacture into sheets, it might find a very large market, as in the automobile industry where the problem of painting and re-painting cars would be eliminated.

Another interesting speculation heads into the field of powder metallurgy—an art already rather well started in so far as non-ferrous metals are concerned. The problem is to develop a steel which will powder readily and weld under pressure. One specialty on the horizon in this field would be the production of powerful magnets made by compressing steel powders. By varying the density of the product, full advantage could be taken of the markedly superior magnetic properties of iron.

Another possibility is further development of what is known as the austempering process—a form of heat treatment now used to increase strength and toughness of certain steel products. At present this process can be applied only to articles not over $\frac{3}{8}$ inch thick if they are made of plain carbon steels and not over $\frac{3}{4}$ inch thick if of alloy steels. If it were possible today to austemper heavier items, like the shaft of a destroyer, enough steel could be saved to permit the destroyer to mount another gun without increasing the weight of the ship.

Development of austempering for heavier sections than is possible today would find application in practically anything that moves, such as airplanes, turbines, reversing mechanisms on machine tools, where savings in weight without sacrifice of strength and toughness are primary considerations. Lighter and more compact structures and equipment, ranging from lathes to streamlined trains could be built.

Another path of steel research, to

which I have already referred, is along the line of producing steels that will stand up under the high temperatures that characterize so many of today's manufacturing processes and operating mechanisms. Only a few decades ago the temperature of boiling water was about the highest heat to which most steel parts were exposed. The ceiling now is many times higher.

Progress is being made in the development of what might be called "refractory steels" to stand up under the high temperatures required in such applications as petroleum refining, jet propelled aircraft, internal combustion engines for automobiles and airplanes, and the production of certain chemicals. If as a result of that research, even higher operating temperatures can be achieved through the use of improved heat-resisting steels, the efficiency of the processes and products of many industries may be raised.

Just where the current research in steel will lead is a question that cannot be answered with any degree of assurance. Very likely some of the most promising developments will fall short of commercial realization. That often happens in research. On the other hand, real progress may be made along some other line that by today's standards might look anything but promising.

We so quickly accustom ourselves to the miracles of industry that it is easy to forget how recently some of those miracles were made.

Only thirty-three years ago, not a very long time back, there was no cutlery steel that would not rust—none of the stainless steel surgical instruments that now are saving lives in our field and base hospitals.

There were no all-steel automobile bodies until about ten years ago when steel companies put on the market the sheet steel products that made all-steel bodies practicable.

Four years ago we didn't know how to produce the steel that now makes the tough, hard core of the armor-piercing shot our guns blast at enemy positions.

Steel has made great strides in recent years, both as an industry and as a material. The urgency of war has accelerated that progress.

At present, as for the past several years, the production of steel for war is the Number One task of the steel industry—a task which has been discharged faithfully and efficiently.

When the time comes for the steel industry to resume its peacetime function of providing the tools and the chief material for the further development of this country, steel will be ready.

Its capacity to produce is far greater than the maximum recorded demand under peacetime conditions. Present capacity of nearly ninety-five million tons of ingots per year is almost fifty per cent greater than actual production in 1929, which still stands as the biggest peacetime year for steel production.

Furthermore, the plants and properties of the industry are probably at a higher average level of efficiency and general up-to-dateness than they have ever been before. Since 1940 more than two billion dollars have been invested in expanding and modernizing steel plants, and more than that amount has been spent for repairs and maintenance.

On the technical side, many of the products which the industry expects to offer postwar consumers will represent improvements over those which were available before the war. Wartime conditions of demand and production bear little resemblance to peacetime commerce. Nevertheless, certain of the new processes and techniques which the industry has learned during the war will be carried over into the peace.

Any speculation of this sort would be incomplete without some direct reference to the lighter metals, aluminum and magnesium, which have lately received so much popular notice.

With productive capacities increased several fold, to meet war demands, those light metals have been regarded in some quarters as likely to transform many metal working industries, even to the point of offering stiff competition for steel.

But steel men generally are not seriously concerned on that point. There is still a substantial price margin in favor of steel. The quantity of light metals available is still but a dribble alongside the huge ton-

(Continued on page 74)



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Mechanical Cotton Pickers

(Continued from page 43)

five feet tall; the low drum type, for plants two and one-half feet or less.

Cotton plants pass between vertical revolving drums as the machine moves down the field. Cam-actuated picker bars equipped with barbed rotating spindles catch the lint. Speed of the drums is synchronized with that of the tractor on which the picker is mounted. The cotton is removed from the spindles by rubber doffers. A vacuum process conveys the cotton to a separating chamber where trash is removed. Air then blows the cotton up into the basket, which holds about one-half bale of seed cotton.

Specialists in cotton growing believe that such machines will be a common piece of equipment on the larger farms, as soon as war conditions clear the way for their manufacture. One, however, believes that it will be 1947 or later, before the cotton picking machine can occupy other than an experimental position in cotton production. Another thinks its present "bugs" will be ironed out. From one state comes the observation that the cotton picker "is here to stay." Authorities in another region say "we are all out for mechanical cotton picking."

Paul W. Chapman, dean of the college of agriculture of the University of Georgia, states that there is no question but that the mechanical cotton picker is absolutely necessary from the standpoint of cotton producers in relation to the labor situation. He points out "it will be necessary to reduce the cost of production of American cotton if the staple is to hold its own in postwar competition. Mechanical cotton production throughout should be the goal of the Cottonbelt."

"The harvesting of cotton is the greatest limiting factor in both production and in reducing the cost of production," says Dale McGregor, extension cotton specialist of the State of Arkansas, pointing out that under the present system sufficient labor must be maintained throughout the year to harvest the cotton. "One family is limited to producing 10 to 20 bales, varying with the size of the family," he asserts, "with a mechanical cotton harvester this family production might be raised

to above 100 bales."

"There is one point which might be well to keep in mind," Mr. McGregor states, and "that is, generally speaking, machines compete to a better advantage with high-cost labor than they do with cheap labor. Wages of agricultural labor per hour in the cotton area have always been somewhere near the price of cotton per pound. When the price of cotton is 10 cents a pound, labor is ten cents per hour or \$1.00 a day. Now that cotton is better than 20 cents a pound, we find labor wages between \$2.00 and \$2.50 a day."

Field tests conducted a year or so in Mississippi, the state which last year had 2,367,000 acres, the second largest area for any of the states planted in cotton, showed the total cost of picking one bale of cotton to \$5.26. The cost for handpicking one bale for the same year was \$39.41. The average for three years for a machine-picked bale was \$5.83; for a hand-picked bale, \$32.14.

Best results with the mechanical cotton picker, according to S. A. Williams, cotton ginning specialist of the State of South Carolina, are obtained when the cotton has been properly defoliated, as defoliation keeps the amount of trash gathered to a minimum. While extra equipment is needed at the gins for handling machine picked cotton, Mr. Williams sees the mechanical pickers as the method by which cotton will be harvested as soon as materials become available to build the machines.

Observations by J. H. Neal, head of the department of agricultural engineering at Alabama Polytechnic Institute, revealed that the cotton picking machines get about ninety per cent of the cotton on the first trip over and ninety-eight per cent on the second trip over. He sees the lower grade cotton being raised by overcoming the problem. Statistics show that the savings per year for the three years when such records were kept indicated a saving of \$16.02 in favor of machine picked cotton despite this disadvantage.

The warning that cotton fibre must meet on commercial battlefields with the synthetic fibres, as well as in the world markets was recently sounded by Oscar Johns-

ton, president of the National Cotton Council of America. Competitors must be met in the market place without resorting to discriminatory legislation, he said. How large is the South's stake in this impending economic conflict is indicated by the fact that thirteen of its states last year cultivated 19,772,000 acres for cotton.

Mr. Johnston made no mention of the mechanical cotton picker, but he did urge "development of means and methods for lowering costs of production." He later asserted that he meant all means of lowering costs per pound of cotton produced. Included are mechanical cultivators; flame throwers for killing weeds and grass; mechanical choppers; mechanical pickers; increases in yields per acre; more effective protection from insects; more efficient ginning and cleaning machine.

In the Delta area, which Mr. Johnston cited as an example, 150 man-hours of labor are required to produce a bale of cotton with ordinary methods. Mechanical cultivation and harvesting would reduce this to 30 man-hours. (S.A.L.)

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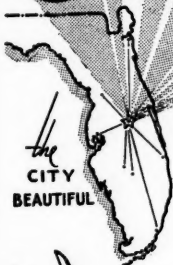
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Curtiss-Wright "Pusher" Plane

(Continued on page 37)

pected to make an important contribution to aircraft patterns of the future.

The XP-55 is a long-wing, single-engine, single-place pursuit ship of all metal construction, with rudders near the ends of the swept-back wing, instead of at the rear of the fuselage. Powered by an Allison 1275-horsepower engine, the plane has "kick-off" control of its three-blade constant-speed propeller.

Improved longitudinal control and maneuverability, as well as improved visibility, are advantages claimed for the "tail-first" model plane, with speed equal to or greater than the conventional design.

Operational noise is less due to the engine being behind the pilot, a

fact which is said to lessen the danger of fire injury. The propeller on the tail eliminates necessity for synchronizing the machine guns clustered in the nose.

The rudder design is said to increase its effectiveness in recovering from spins. The forward position of the elevators removes them from the compressibility wake of the wing. Handling characteristics on both the ground and at high altitudes are pointed to by the designers.

The XP-X for experimental and P for pursuit—was developed by the Curtiss-Wright Corporation's airplane division at St. Louis, Mo. Work on the project was started early in 1939 and the plane was first flown at Scott Field, Ill., in July, 1943, with other flights at Lambert Field, St. Louis.

Pan-American Constellations

(Continued on page 49)

Pan-American Airways Clippers and has a wingspread of 123 feet and an overall length of 95 feet, 1 inch, dwarfing the DC-3, standard commercial plane, with a

spread of 95 feet and a length of 64 feet, six inches.

Weighing 45 tons, the Constellation is designed to operate at extreme altitudes, her pressurized cabins enabling it to fly at 30,000 feet without discomfort to crew

or passengers. Because of its great power, the sky giant takes off in less than 1,500 feet at sea level, making it extremely valuable for operations from small fields.

Pan-American Field, located at Northwest 36th Street in Miami, is the largest international airport in the world. It is used by Pan American's land planes, as well as by the aircraft of all other lines flying into Miami. Arrivals and departures average 419 weekly, many of them with passengers and cargo of an international nature.

The field's terminal building, built at a cost well over \$250,000, houses port personnel for five airlines, Civil Aeronautics Authority offices, United States Weather Bureau, PAA Meteorology, immigrations and customs offices, etc. Two or more aircraft may load or unload simultaneously at the terminal entrance. The airport covers a total area of 224 acres and has two major runways, one 4,300 feet long, the other 3,600.

Pan-American's million-dollar aircraft maintenance hangar and office building, completed in 1943, is the show place of the grounds. This structure consists of three 4-story office buildings separated by two large hangars, permitting simultaneous servicing of 12 to 18 Clippers, depending on their size. In addition to the hangar buildings, there are hangars used by P. A. A., two of which are used by EAL, as well as radio, operations, shop and storage buildings, fuel storage tanks, etc., all necessary to airline operations.

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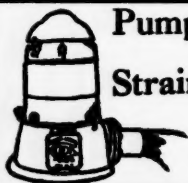
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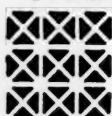
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FOR

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ROANOKE, VIRGINIA

Southern Industrial Expansion

(Continued from page 49)

to provide equipment at plant at Houston at cost of about \$90,000.

HOUSTON — Expansion — Defense Plant Corporation increased its contract with Hughes Tool Co., to provide additional plant facilities at cost of \$6,000,000, making total commitment \$17,000,000; the \$6,000,000 will be expended for new equipment.

HOUSTON — Plant — Brown and Root, Inc., Houston, has contract for erection of tire plant for Kelly-Springfield Tire Co., Cumberland, Md., cost \$8,000,000.

HOUSTON — Plant — Erwin-Newman, has contract for construction of prefabricated structural steel buildings, Rheem Manufacturing Co.

HOUSTON — Plant — National Vinegar Co., plans reconstruction of plant, to cost approximately \$100,000.

HOUSTON — Plant — Oilfield Salvage Co., Inc., acquired 36½ acres for future expansion.

HOUSTON — Plant — Rheem Manufacturing Co., San Francisco, Calif., will occupy buildings and facilities to be furnished by the Defense Plant Corporation, doubling present facilities; will machine and assemble shells; estimated cost \$3,125,000.

HOUSTON — Plant — W. S. Bellows Construction Co., has contract for completion of rice drying plant, cost approximately, \$200,000; Southern Warehouse Corp.

HOUSTON — Warehouse — U. S. Government, c/o Defense Plant Corporation, Washington, D. C., plans construction of warehouse.

ITASCA — Expansion — Hill County Electric Cooperative, Inc., let contract to White & White Construction Co., Electra, Tex., for construction of 25 miles to serve 70.

KINGSVILLE-HARLINGEN — Lines — Central Power & Light Co., Corpus Christi, will construct transmission line between

Kingsville and Harlingen.

LUBBOCK — Expansion — South Plains Electric Cooperative, Inc., let contract to Taylor & Montgomery, Lubbock, for construction of 28.55 miles to serve 75.

ORANGE — Plant — E. I. duPont de Nemours and Co., Wilmington, Del., plans \$2,000,000 nylon salt plant approximately 3 miles south of Orange; work to get underway within the next five weeks; will be a chemical plant to make nylon salt, one of the ingredients to be used in manufacture of nylon; approximately 1,000 workers to be employed; approval for the construction of the plant was given by W. P. B.

PHARR — Packing Plant — M. R. Nelson Construction Co., has contract for construction of packing plant; cost approximately \$150,000; Texas Products Company, owners.

PORT LAVACA — Plant — City, will construct quick freeze plant cost about \$200,000.

RAYMONDVILLE — Canning Plant — Delta Canning Co., plans construction of one and two story building.

SAN ANTONIO — Plant — Dr. Pepper Bottling Co., of San Antonio, plans construction of plant building.

SAN ANTONIO — Radio Station — C. L. Browning, Jr., has contract for constructing radio station; Gullbeau Road; Alamo Broadcasting Co., (K A B C), owners.

SAN ANTONIO — Stations — City has had priorities granted by WPB for construction of electric power distributing stations in the packing house districts and near Culebra Road and West 24th Street; work to be started within four months; a priority also has been granted for a three conductor underground cable to be laid parallel to three now in use in the down town area, a distance of two miles, cost \$20,000; cost of the two distributing stations will be \$158,000; funds available.

TAHOA — Electric Lines — Lyntegar Elec-

tric Cooperative, have REA funds in amount of \$75,000 for extensions.

TEXAS CITY — Rebuilding — Nunez Construction Co., Inc., has contract for rebuilding docks on Houston ship channel, for American Liberty Pipeline Co., Galena; \$33,000.

VICTORIA — Expansion — Victoria County Electric Cooperative Co., let contract at \$24,097 to State Electric Co., Fort Worth, for construction of 100 miles of line to serve 139.

VIRGINIA

BLUEFIELD — Plant — National Gypsum Co., Buffalo, New York, purchased limestone deposits of the Kimbalton Lime Co. near Bluefield; will raze existing plant building and erect new building; as soon as building restrictions are removed; two rotary kilns, a hydrate plant and a limestone flour plant are planned for the mine.

WINCHESTER — Plant — Phil Prinkle, I. Fred Stine, and associates approved recommendation of Frederick Poultry Committee for establishing a cooperative processing plant in the area; cost \$50,000.

WEST VIRGINIA

NATRIUM — Plant — Goodyear Tire & Rubber Co., Akron, Ohio, will construct a new plant in Natrium; estimated cost \$1,500,000; will manufacture new rubberlike plastics known as vinyl chloride co-polymers.

Commonwealth and Southern Declares Dividend

A dividend on the preferred stock of The Commonwealth & Southern Corporation of \$1.25 per share was declared by the board of directors, Feb. 20, subject, however, to an order of the Securities and Exchange Commission.

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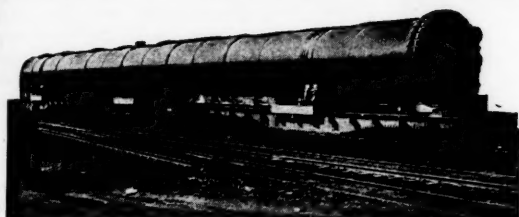
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Take Care of Themselves—Why?

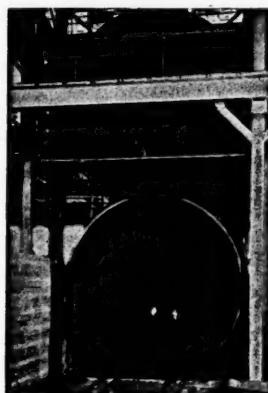
Well, they are built of well known cypress and 50 years' practical experience. Installations all over the South. We make good wood pipe also. Ask for catalogue.



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FROM DESIGN

TO CASTING

TO MACHINING

TO FINAL ASSEMBLY

Fig. 16 — Bronze "RENEWO" GLOBE

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RESISTANT ALLOY VALVES, 125 TO 2500 LB. S. P.;
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● Fig. 2125—125-lb. S. P.
Bronze Gate, Double Disc,
Rising Stem



South's Contracts High

(Continued from page 34)

The contract was awarded for the \$10,000,000 tire plant to be constructed at Nashville, Tenn., with Defense Plant Corporation funds and operated by Goodyear Tire & Rubber Co. An \$18,000,000 project for the same purpose was previously announced for Tuscaloosa, Ala., where B. F. Goodrich Company will be in charge of operations.

Goodyear is carrying out a \$2,000,000 project at Gadsden, Ala. A \$250,000 "within-walls" expansion will be made at the Memphis, Tenn., plant of Firestone Tire & Rubber Company. Other tire manufacturers in the expansion news included Robbins at Tusculum, Ala., Schenult at Baltimore, Md., and Richards at Bowdon, Ga.

One of the important undertakings interesting because of its past history is the Muscle Shoals nitrate plant, which will be pressed into service in converted form to make artillery shells. Hughes Tool Company, Houston, is where another large shell project is starting. Both will involve expenditure of millions of dollars. Amounts up to \$10,000,000 have been estimated as cost of a project at Brunswick, Ga.

Operations in three states will be extended by Rheem Manufacturing Company, with plants at Houston, Texas; Sparrows Point, Md., and Birmingham, Ala. Contracts have been let for the Houston project, where \$3,125,000 will be spent to make shells. The Sparrows Point work will involve \$250,000 after the war. Expenditure of \$1,500,000 is expected to open a second Rheem plant at Birmingham.

Facilities to increase chemical production for explosives were announced for Kentucky, Missouri, Tennessee and Texas. Over \$2,200,000 will be spent for the purpose at the Memphis plant of Buckeye Cotton Oil Company. Kentucky Ordnance Works, Paducah, will be expanded for similar production, as will the Weldon Springs, Mo., ordnance plant. Three Texas projects will cost \$510,000.

Gas and gasoline expansions in the south included a \$5,000,000 project for adding four compressor stations on the Louisiana-West Virginia line of the Tennessee Gas and Transmission Company; a \$7,000,000 pipeline for the same company between the Carthage gas field in Texas and Monroe, La., and new 100-octane aviation gasoline plants at Sugar Creek, Mo., and Houston, Texas. The latter will be for the Standard Oil Company of Indiana and Shell Oil Company and were two of five announced by the Petroleum Administration for War.

Plant construction has been active recently in the rice processing field. The latest project reported is a \$200,000 plant at Houston, Texas, for Southern Warehouse Corporation.

A quick-freeze plant of similar cost is proposed for Port Lavaca, Texas, and a \$150,000 packing plant at Pharr, in the same state, placed under contract.

The need for containers for crating and packing ammunition was expressed in an announcement that a \$3,500,000 plant for that purpose would be erected

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at Pine Bluff, Ark. American Container Corporation, a subsidiary of American Can Company, will operate the plant.

In the postwar category was purchase of 800 acres along the Ohio River, near St. Mary's, W. Va., where Calco Chemical division of American Cyanamid Company is expected to carry out plans for development after hostilities cease. National Gypsum Company is reported to have purchased limestone deposits near Bluefield, Va. A \$2,500,000 project was previously reported for Baltimore.

INDUSTRIAL

(Including Private Utilities)

	February, 1945	Contracts	Contracts
	Contracts	to be	Awarded
	Awarded	First Two	Months 1944
Alabama ..	\$87,385,000	\$6,255,000	\$61,515,000
Arkansas ..	.....	3,600,000	.....
Dist. of Col.	13,000	.....	13,000
Florida ..	1,910,000	750,000	2,488,000
Georgia ..	643,000	10,595,000	743,000
Kentucky ..	2,075,000	.....	2,075,000
Louisiana ..	683,000	500,000	796,000
Maryland ..	689,000	270,000	1,088,000
Mississippi ..	254,000	735,000	372,000
Missouri ..	199,000	110,000	319,000
N. Carolina ..	143,000	690,000	505,000
Oklahoma ..	40,000	80,000	40,000
S. Carolina ..	164,000	1,275,000	311,000
Tennessee ..	12,535,000	265,000	12,785,000
Texas ..	24,835,000	30,489,000	36,275,000
Virginia ..	12,000	298,000	577,000
W. Virginia ..	37,000	1,500,000	37,000
TOTAL ..	\$87,597,000	\$57,412,000	\$119,939,000

PUBLIC BUILDING

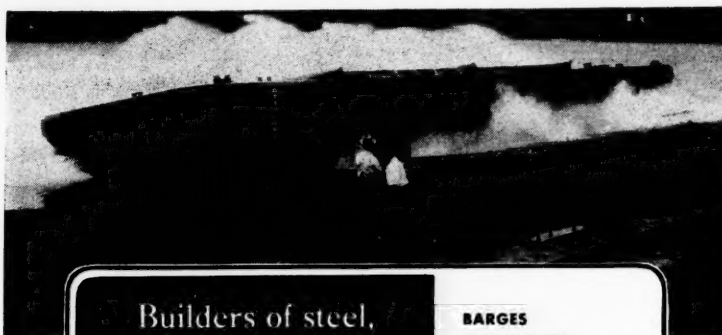
(City, County, Federal; Housing; Schools)

	February, 1945	Contracts	Contracts
	Contracts	to be	Awarded
	Awarded	First Two	Months 1944
Alabama ..	\$2,359,000	\$13,260,000	\$6,400,000
Arkansas ..	.....	260,000	50,000
Dist. of Col.	2,713,000	11,913,000	5,427,000
Florida ..	553,000	970,000	1,271,000
Georgia ..	175,000	6,460,000	2,054,000
Kentucky ..	1,448,000	375,000	1,504,000
Louisiana ..	278,000	5,390,000	742,000
Maryland ..	1,635,000	1,052,000	5,629,000
Mississippi ..	4,519,000	4,348,000	4,799,000
Missouri ..	1,560,000	900,000	1,630,000
N. Carolina ..	317,000	4,075,000	1,614,000
Oklahoma ..	83,000	960,000	426,000
S. Carolina ..	122,000	3,849,000	787,000
Tennessee ..	2,461,000	870,000	2,710,000
Texas ..	1,835,000	15,381,000	2,770,000
Virginia ..	1,875,000	14,812,000	3,950,000
W. Virginia ..	.....	100,000	.....
TOTAL ..	\$21,933,000	\$84,975,000	\$41,781,000

PUBLIC ENGINEERING

	February, 1945	Contracts	Contracts
	Contracts	to be	Awarded
	Awarded	First Two	Months 1944
Alabama ..	\$472,000	\$220,000	\$929,000
Arkansas ..	150,000	90,000	272,000
Dist. of Col.	205,000	185,000	402,000
Florida ..	2,674,000	3,854,000	5,023,000
Georgia ..	465,000	255,000	1,659,000
Kentucky ..	.....	200,000	.....
Louisiana ..	1,532,000	1,010,000	1,705,000
Maryland ..	384,000	620,000	1,440,000
Mississippi ..	386,000	600,000	176,000
Missouri ..	114,000	25,000	191,000
N. Carolina ..	1,123,000	656,000	2,422,000
Oklahoma ..	35,000	300,000	349,000
S. Carolina ..	243,000	14,330,000	601,000
Tennessee ..	.....	660,000	.....
Texas ..	3,773,000	16,714,000	7,976,000
Virginia ..	963,000	1,808,000	1,122,000
W. Virginia ..	.....	.....	.....
TOTAL ..	\$12,549,000	\$41,527,000	\$24,567,000

All-welded sand barge of two sand compartments



Builders of steel,
all-welded and riveted
floating equipment
for rivers and
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Ways at Ambridge, Pa., and Trenton, N. J.

AMERICAN BRIDGE COMPANY

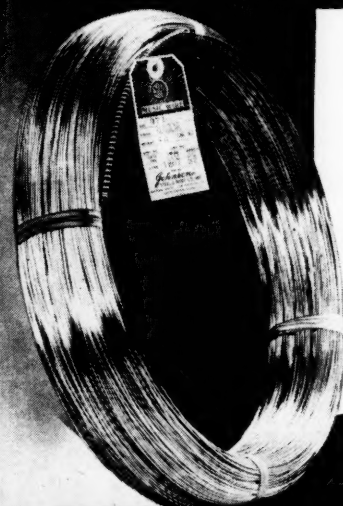
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Quality wire under constant laboratory control all the way from raw material to finished product . . . to meet precisely the most exacting specifications of industry.

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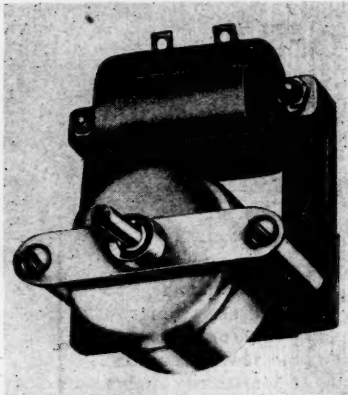
CHICAGO

LOS ANGELES

MARCH NINETEEN FORTY-FIVE

67

Telechron Announces Low Speed Motor



Timing and control motor

A new timing and control motor with terminal shaft speed of one revolution per hour has been developed by the Warren Telechron Co., Roy W. Johnson, vice president, recently announced. This motor marks Telechron's first attempt to enclose within a sealed case a motor having a terminal shaft speed slower than one revolution per minute. It was designed to meet control manufacturers' demands for a slow speed, totally enclosed motor for use in timers, thermostats, oil burner and coal stoker controls, and other apparatus in which minimum space and slow speeds are necessary.

This new motor has an input rating of 2 watts and can be furnished in other speeds up to and including six revolutions per hour, say the manufacturers. A special oil gland has been built into the terminal shaft bear-

ing, thereby extending its life greatly under industrial and domestic operating conditions. The terminal shaft is concentric with the outer case of the motor.

Telechron has also developed a companion model having a terminal shaft speed of three revolutions per hour. This type design has an eccentric terminal shaft placed normally in the 12 o'clock position in respect to the outer case. This design can also be furnished at speeds of from 3-rph to 6-rph. Production samples of both designs will be available when Telechron's vital war production eases.

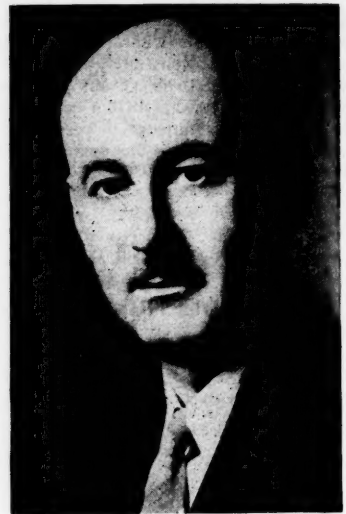
New Skilsaw Officers

The board of directors of Skilsaw, Inc., Chicago, manufacturer of portable electric tools, recently promoted E. J. Kelley to the office of vice president in charge of engineering, and named J. L. McManus secretary of the company. Mr. Kelley was formerly secretary and for many years has directed engineering and new product development. Mr. McManus, an attorney, has been promoted to his new position from that of director of purchases. The directors also announced the election of E. B. McConville, treasurer, to membership on the board. All three men will continue to serve on the operating committee.

Surplus Property Handbook Available

The Surplus Property Board recently announced that a pamphlet containing Sections III, IV, and V of the "Handbook of Standards for Describing Surplus Property" is now available at the Superintendent of Documents, Washington, D. C., at a price of 15 cents a copy. These sections cover the following classes of property: Section III, Textile, Leather, and Fiber, Crude, Basic and Finished Products, Section IV, Chemicals, Drugs, Medicines, Oils, Fats, Waxes, Cosmetics, and Household Chemical Preparations, Section V, Glass, Clay, Stone, and other Non-Metallic Mineral, Crude, Basic, and Finished Products. The Board emphasized that this publication is not a list of surplus property that is available for sale.

Sommers Made Chief of Mathieson Engineers

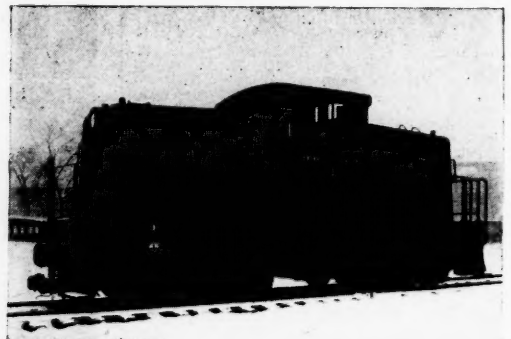


Howard A. Sommers

Howard A. Sommers, of The Mathieson Alkali Works, has been made Chief Engineer of the corporation, with headquarters in New York City. Mr. Sommers joined the Mathieson organization in 1925, several years after he was graduated from Case School of Applied Science in his native city of Cleveland, Ohio. He is a member of the American Society of Refrigerating Engineers, the Compressed Gas Manufacturers Association and the Manufacturing Chemists Association.

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LOW MAINTENANCE
DEPENDABLE POWER
HIGH AVAILABILITY
LONG LIFE CONSTRUCTION
ECONOMICAL OPERATION



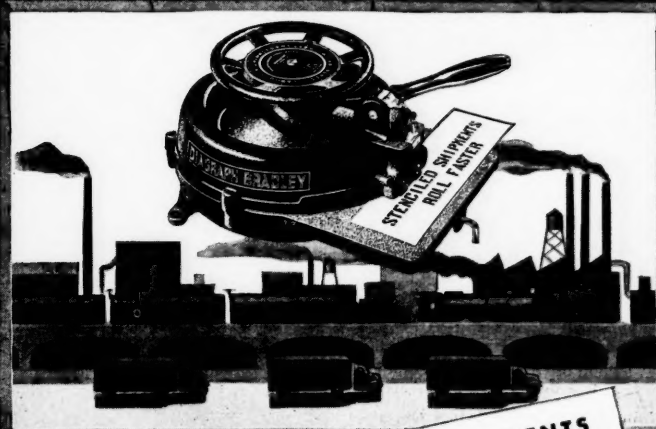
Two, 65-ton Diesel Electric Locomotives with Whitcomb's well-known features are now in service at the Granite City, Illinois plant of General Steel Castings.



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Here is a new fastener, the Flex V, for the smaller sizes
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performance record as the Alligator V-belt fastener has
already established for the larger sizes of V-belts.

This new Flex V fastener is made in two sizes for A and
B section V-belts. It is simple in design, easy to apply and
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V-belts without dismantling shafting or machinery. No metal
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for flat transmission belts. Alligator V-belt Fasteners
for V-belts and Flexco HD Belt Fasteners and Rip
Plates for fastening and repairing conveyor belts.

Worthington Pump Host to Educators



Worthington Diesel engine being inspected by visiting educators.

Cooperating with the Diesel Engine Manufacturers Association in an educational program aimed at improving Diesel instruction in the nation's universities to the mutual benefit of industrialists and educators, the Worthington Pump and Machinery Corp.'s Buffalo Works recently acted as hosts to a group of faculty representatives of leading area engineering schools. In addition to touring the entire plant, the educators were given a special opportunity to inspect first hand important research and development work in progress there.

Following the tour, a round-table discussion of plant operation and facilities was held. Austin C. Ross, manager of the Buffalo plant, and W. E. Wechter, manager of the engine division, conducted the visiting group, which included: Prof. Paul E. Mohr, Head, Dept. of Engineering, University of Buffalo; Prof. Otto, Engineering Dept., Cornell University; Mr. H. J. Loberg, Asst. to Dean, College of Engineering, Cornell University; Prof. Edward McHugh, Mechanical Engineering Dept., Clarkson University; Mr. Cyril Donaldson, Mechanical Engineering Dept., University of Rochester; Prof. John A. King,

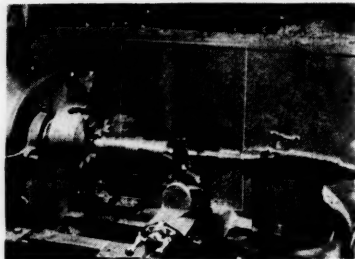
Mechanical Engineering Dept., Syracuse University; Prof. P. H. Steining, Head, Mechanical Engineering Dept., University of Pittsburgh; Harvey T. Hill, Executive Director, D. E. M. A.; Prof. Robert B. Rice, Technical Consultant D. E. M. A. Head, Mechanical Engineering Dept., University of North Carolina.

Safety Device Utilizes Magnet

A new safety device to eliminate the need of goggles and face shields in many machine tool operations is now being made by the Dilley Manufacturing Co., 10103 Euclid Ave., Cleveland 6, Ohio.

Known as the magnetic grip shield, the device consists of thick transparent sheets of plastic anchored into a horseshoe permanent magnet. Made in various sizes, it may be instantly positioned without tools. The magnet in the base holds the shield in position, but with a slight twist it may be moved to suit operating conditions.

The shield deflects flying chips, metal dust,



sparks, oil and liquids, protecting machine operators without obstructing vision. It can be used on all types of machinery such as lathes, grinders, drill presses, milling machines, buffing and sanding machines or wood-working machines such as band saws, joiners, planers, jig saws or other machinery where operations produce flying particles. Sizes range from 3 inches by 4 inches to 8 inches by

10 inches and there is a special hood type for long-time operations. The 8 inches by 10 inches model illustrated.

Bonner Passes

Albert Sydney Bonner, 53, president of the Clark Equipment Co., Buchanan, Mich., large manufacturer of automotive equipment, died at his home in Buchanan on February 8. A native of New York, Mr. Bonner graduated from Princeton University in the class of 1913, and had been with Clark since 1915.

Buehrer Promoted by Boice-Crane

Myron H. Buehrer, who for twelve of his seventeen years with the Boice-Crane Co., Toledo, Ohio, served as sales manager, has been elevated to the position of general manager. He will continue to direct the advertising and sales of that power tool manufacturer.

New Materials Threaten Explosion Hazards

With the advent of a new age—an age of plastics, light metals, laminated wood, and other materials as modern as tomorrow—industrial dust explosions challenge the safety engineer as one of his major problems, according to a recent publication by Dr. H. R. Sayers, director of the U. S. Bureau of Mines.

These new materials and the new manufacturing methods they involve are increasing the fire and explosion hazards of industrial plants, the report says, for laboratory and pilot plant tests prove that synthetic resins, metal powders, wood dust, and many other finely-divided substances can form explosive mixtures with air. Given a concentrated cloud of one of these dusts suspended in air, only an ignition source of sufficient intensity is needed to start combustion—a spark from a tool or shoe nail, the match of a careless smoker, a welding or cutting flame, friction heating, or static electricity.

A copy of Information Circular 7309, "Industrial-Dust Explosions," by Hylton R. Brown, may be obtained by writing to the Bureau of Mines, Department of the Interior, Washington 25, D. C.



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In these times bag production is war production. Our plants have supplied millions of sand bags as well as various other items for use in combat areas. Behind the lines, supplies of food and other material are transported thousands of miles in bags specially designed to protect contents against hazards of rough handling, moisture and insects. Back here at home bags must move a long list of essential commodities ranging from small machine parts, through dozens of items of food, feed and produce to the hygroscopic chemicals requiring special waterproof packages. Many Fulton Waterproof Paper Lined Bags are replacing containers made of critical materials—metal drums, wooden boxes and barrels.

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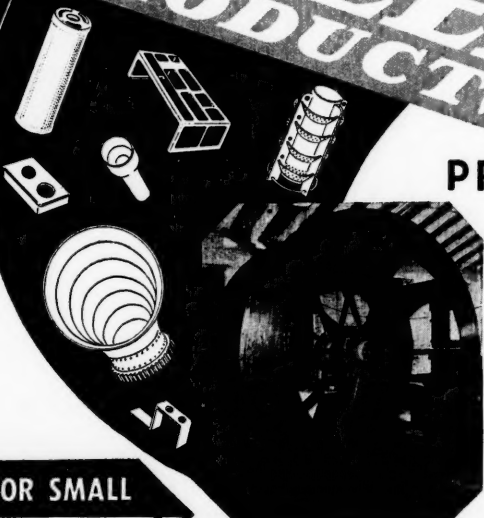
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MARCH NINETEEN FORTY-FIVE

71

TRADE LITERATURE

WELL CONTROLS

Manning, Maxwell and Moore, Inc., Bridgeport 2, Conn., have prepared a special bulletin featuring their "Ashcroft" air control for controlling the volume of air in the water storage tanks of shallow well pneumatic systems.

FLEXIBLE SHAFTS & MACHINES

N. A. Strand and Co., 5001-5009 N. Wolcott Ave., Chicago 40, Ill., have issued a new catalog, No. 29, of their "Strand" line of flexible shafts and machines. Profusely illustrated, the catalog carries complete specifications and shows many practical applications of the company's products.

GLASS TANKS

Pittsburgh Plate Glass Co., Pittsburgh, Pa., or any of their branches, have a special bulletin of their glass tanks suitable for hot acids, electroplating, dyeing, food processing and other operations. Illustrated, a number of practical applications are shown.

TIME DELAY RELAYS

The R. W. Cramer Co., Centerbrook, Conn., manufacturers of electric timers, have issued a special bulletin, No. 3100, describing a new type delay relay which has many important applications in radio transmitter and radar equipment, one of which is tube protection. The new unit is available for both AC and DC operation.

STEAM CONDENSER

Niagara Blower Co., 6 E. 45th St., New York 17, N. Y., have prepared a special bulletin, No. 89, which graphically illustrates functions of their aero steam condenser.

HEATERS AND COOLERS

A new, 12 page, loose-leaf, 8 1/2 x 11 two color Bulletin No. 35-76B on "Adseo" heaters and coolers includes three new types with

dimensions, capacity tables and list prices on units suitable for use as instantaneous heaters, condensate coolers, preheaters, fuel oil heaters, etc. A copy of the bulletin will be sent upon request to the American District Steam Co., North Tonawanda, New York.

LUMBER HANDLING EQUIPMENT

"Moore Facts Bulletin 4502," a special leaflet prepared by Moore Dry Kiln Co., Jacksonville 1, Fla., will be of value and interest to those in the lumber industry confronted with problems of labor shortages. Illustrated with photographs and line drawings, practical applications of cable lifts, breakdown hoists, stackers and unstackers, turntables, car pullers and turntables are graphically shown.

SELF-PRIMING CENTRIFUGAL PUMPS

Marlow Pumps, Ridgewood, N. J., manufacturers of centrifugal pumps, have issued a special handbook on pumps titled, "Self-priming Centrifugal Pumps." Authored by A. S. Marlow, Jr., the handbook is a scientific treatise on the principles of centrifugal action, the physics of pumping and the evolution of self-priming centrifugal pumps. Basic engineering information, prepared in easy-to-understand style, makes it a booklet that will be of interest to engineers and others concerned with the handling of liquids. Ample illustrated, copies may be had on direct request to the company.

THERMOSTATIC CONTROL BOOKLET

For accurate, automatic control of temperatures up to 650° F., seven types of bimetal thermostats to fill a wide range of applications are described in a new booklet announced by Westinghouse Electric and Manufacturing Co., Box 868, Pittsburgh 30, Pa. The new booklet describes and pictures thermostats for aircraft equipment, instrument and bandage sterilizers, motor and wiring protection, vulcanizers, radio equipment, oil purifiers, flat-irons, roasters, water heaters, dehydrators, casseroles, sealing machines, ironing machines, domestic storage type heaters and integral horsepower motors.

FLASHLIGHT BATTERY CHARGER

A catalog section on its recently introduced charger for its wet rechargeable flashlight batteries which can be operated from the

ignition system of automotive vehicles has been published by the B. F. Goodrich Co., Akron, Ohio, and is now available upon request. The section describes the equipment, tells its functions and pictures methods by which it may be attached to the vehicle.

INDUSTRIAL RUBBER GLOVES

A new catalog section on its all-synthetic industrial rubber gloves has been published by the B. F. Goodrich Co., Akron, Ohio, and is now available upon request. Feature is a page devoted to illustrated instructions on how to get the most service at the lowest cost from acid and industrial rubber gloves. A page also is devoted to the company's line of plastic treated industrial aprons.

Merrill R. Carr Heads Reid Hayden at Baltimore

Merrill R. Carr, formerly vice president and general manager, was recently elected president of Reid Hayden, Inc., Baltimore, insulation contractors and distributors for Johns-Manville Sales Corp., manufacturers of asbestos and other insulation products.

Founded in 1924, Reid Hayden, with branches in Charlotte and Richmond, has furnished and installed insulation on many of the large war projects in eight southern states. In addition to project and facility installations, the corporation has installed insulation on over 1,200 ships of our great war-time merchant fleet.

The four 24,000-ton ore carriers to be built at the Bethlehem Sparrows Point yards will be insulated by Reid Hayden. These ships, the largest thus far to be built in Baltimore, will have the highest pressure steam plants ever installed in American-built cargo vessels.

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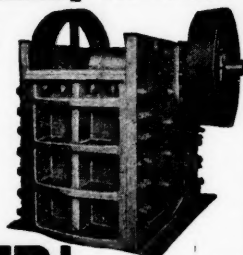
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Equipment



Heavy Duty
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150 to 200 tons Per
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Shovel Rock to 5"
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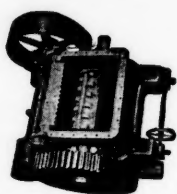
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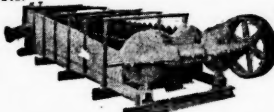
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Manufacturers of Mitco Open Steel Flooring, Mitco
Shur-Site Treads and Mitco Armorgrids.

The Compulsory State

(Continued from page 33)

ernment control is permanently good and how that group likes another. So there it is again, the flight from risk.

How much good do solemn lectures on the illusion of "security" do when the wage earners to whom they are addressed can read the financial pages and see how some executives are being given annuities and pensions on top of sizable salaries? Stockholders read of

these and complain with just cause. Some propose action, but not always the action that lies within their power as stockholders and investors. Some suggest that this or that government agency take a hand. Could it be that they are under the delusion that government will manage their affairs and still allow them dividends?

The vast majority of those in business and finance in this country do not, we believe, desire the government in their affairs. They want

the situation which put the government there ended as soon as possible. But there are far too many who want the government to build them shelters from the risks without which free enterprise is not free.

A good many German industrialists and financiers thought that Adolf Hitler was not so bad. They gave him money. He came to power and for a time they had pleasant sailing with the government the main partner in their cartels.

But there came a day when they went to Herr Hitler and he was no longer so agreeable. He is reputed to have remarked that he "hoped these gentlemen were under no delusion that he had built this structure for their benefit."

Those German business men must have left that conference with the sickly feeling of a man who is the victim of his own booby trap.

What a tragedy if history recorded that business in America was as stupid!

"Steel Tomorrow"

(Continued from page 58)

nages of steel. And some of the special steels recently developed give greater strength with little added weight. Steel is still the cheapest, most abundant and most versatile of all metals. It will share fully in any degree of industrial activity or expansion which the future holds.

Paper Machine Backlog

(Continued from page 46)

were reported as now operating from 80 to 90 per cent on war work other than making new mill machinery or spares and replacement parts. This fact in some measure accounts for backlogs of regular industrial orders, which are not to be filled until war orders are completed, committee members reported.

Reviewing the general mill machinery situation, officials said that production of new machinery in the second quarter would be reduced about 25 per cent below that of the first quarter, chiefly as a result of a reduction of available steel amounting to 27 per cent as compared to the first quarter and a cut in copper of 10 per cent. Paper and pulp mill operators have been requested to postpone all repair and other maintenance and operating purchases unless immediately urgent.

Members of the machinery industry were told that little if any unused or unrequired material was returned or reported as surplus in the first quarter, but that such returns should be made so that any available materials may be utilized for necessary repairs and replacements.

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